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INCIDENCE AND CHARACTERISTICS OF DEPRESSION IN LATE CHILDHOOD: AN EXPLORATORY STUDY

by

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ABSTRACT

In this exploratory study, the author started from the assumption that depression exists as a clinical entity in childhood, and undertook to determine the incidence of depression in late childhood and to describe the characteristics of depressed children.

The Children's Depression Inventory, the Children's Depression Scale, the Culture-Free Self-Esteem Inventory for Children, Form A, and the Nowicki-Strickland Locus of Control Scale for Children were administered to 610 students in grades 4, 5, and 6 enrolled in the Edmonton Public School System. Information on intellectual ability and academic achievement was obtained from cumulative records on each student. Parents of each subject completed a questionnaire comprised of a checklist of concerns on children's behavior into which the DSM-III criteria for depression were embedded, together with a section requesting information on change and loss situations.

Results of the study suggested that from 2% to 9% of a normal population of children suffer from depressive syndromes, probably more females than males are affected, and some, but not all, of the symptoms may dissipate with time.

Depressed children were found to have more negative self-esteem and more external locus of control than nondepressed children. There were some indications that academic achievement may be influenced by depression but results were not clear. Depressed children experienced more change situations and had more behavior problems than nondepressed children; however, it was felt that a better understanding of the family dynamics was needed in order to understand this relationship.

An examination of the results suggested that the Children's Depression Inventory and the Children's Depression Scale were basically measuring the same entity and identifying the same children, but the Children's Depression Scale was less inclusive. The depressive symptoms on the parent questionnaire appeared to be only minimally related to the self-report measures.

Eight factors emerged from factor analysis accounting for 66.68% of the variance. These were identified as depression, bipolar self-esteem and depression, academic, parental concerns, loss, change, illness, and age.

Results of this study were discussed in relation to the findings of past researchers. Implications for future research, education, and clinical practice were discussed.

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CHAPTER I

INTRODUCTION

Historical Perspective

Over the years there has been considerable controversy over whether or not childhood depression exists as a clinical entity. During the 1960's the debate primarily concerned whether childhood depression was psychodynamically possible (Kashani, Husain, Walid, Shekim, Hodges, Cytryn, & McKnew, 1981). Investigators of childhood depression (e.g. Glaser, 1968; Toolan, 1962) took the viewpoint that because children were unable to understand or verbalize their feelings, different criteria than that used with adults must be used for diagnosis of children. A number of "depressive equivalents" such as acting-out behaviors, somatic complaints, and school phobia or failure were proposed as presenting symptoms of childhood depression.

Sandler and Joffe (1965) studied the case records of 100 children, and found a number of children with depressive symptoms such as sadness, withdrawal, discontent, feelings of being rejected or unloved, inability to accept comfort, tendency to regress to oral passivity, and insomnia. They concluded that depression was a basic affective state similar to anxiety and could be found in all ages.

In a comprehensive review of the literature to date, Rie (1966) concluded that the concepts of depression could not be appropriately applied to childhood, and that childhood depression did not exist. He reasoned that concepts central to depression such as self-directed aggression and loss of self-esteem could not be applied to children. Self-directed aggression was a superego phenomenon and as such was irrelevant to a discussion of childhood. He further argued that children had yet to develop a self-representation of sufficient stability and intensity, and, even more important, a sufficiently stable self-ideal necessary for the loss of self-esteem found in depression. He questioned whether children had enough experiences or a well-enough developed time perspective and future orientation to acquire the hopelessness seen in depression. The studies diagnosing depression on the basis of the behaviors listed as depressive equivalents were criticized on the basis that the connection between these equivalents and depression was not adequately explained.

In the 1970's the view that childhood depression exists as depressive symptoms has gained increasing acceptance. The controversy, however, continued. Lefkowitz and Burton (1978) criticized the concept of childhood depression as a clinical entity because symptoms such as withdrawal, crying, school failure, disobedience, enuresis, and somatic complaints occurred at a high rate in the population and dissipated with time. They stated that there were no valid and reliable methods of assessing childhood depression and that with no supporting data, there was no evidence of the existence of a syndrome of depression in children.

In a critique of the Lefkowitz and Burton article, Costello (1980) agreed that currently there were no valid means of assessing children's depression. He argued that the high rate of specified symptoms in the population did not negate the concept of childhood depression, but rather indicated the need to obtain data on the prevalence of a constellation of behaviors in order to study the syndrome of depression in children.

The Fourth Congress of the Union of European Pedopsychiatrists met in Sweden in 1971 with the theme "Depressive States in Childhood and Adolescence." In summarizing the contributions of participants, Annell (1972) concluded that depressive states accounted for a large number of childhood and adolescent disorders, and that such states are difficult to diagnose in this age group. Another major conference held by the National Institute of Mental Health (NIMH) in 1975 addressed the issues involved in childhood depression (Schulterbrandt & Raskin, 1977). Some investigators have worked from the assumption that childhood depression exists and have been developing classification systems (Cytryn & McKnew, 1972; Malmquist, 1971; McConville, Boag, & Purohit, 1973), diagnostic criteria (Ling, Oftedal, & Weinberg, 1970; Weinberg, Rutman, Sullivan, Penick, & Dietz, 1973), and assessment instruments (Kovacs & Beck, 1977; Lang & Tisher, 1978).

Poznanski and Zrull (1970) studied the characteristics of depressed children and, in a follow-up study 6½ years later (Poznanski, Krahenbuhl, & Zrull, 1976) found that on the basis of psychiatric interviews 50% of the depressed children were still overtly clinically depressed in late adolescence and early adulthood. These studies suggested that, in many cases, childhood depression continues into adulthood.

Anthony (1975) reviewed the factors for and against childhood depression as a concept. He indicated that different manifestations of depression could be found at various stages of the life cycle and concluded that it would be reasonable to expect depression to be considerably different at earlier and later childhood.

Kashani, Husain, Walid, Shekim, Hodges, Cytryn, and McKnew concluded from their recent review that "the current literature suggests that depression as a clinical entity exists in children" (1981, p. 150). The third edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-III) by the American Psychiatric Association (1980) stated that the criteria for depression can be used with children although associated features vary at different ages; childhood depression has achieved official recognition.

Nature of the Study

Although the majority of work in the area of childhood depression has been concerned with the existence of the concept, the manifestations of, and diagnostic criteria for childhood depression, some researchers have assumed that childhood depression exists as a clinical entity and have attempted to study it.

In reviewing the literature on childhood depression, Kashani, Husain, Walid, Shekim, Hodges, Cytryn, and McKnew (1981) found that reported incidence varied greatly depending on the diagnostic criteria used and the populations studied. The issue was further confused by the fact that some investigators included adolescents in their studies while others did not. Reported incidence in various settings ranged from 1.4/1,000 to 59%. Lefkowitz and Burton (1978) indicated that our knowledge of childhood depression is based almost totally on clinical studies with little knowledge of incidence in the normal population. Costello (1980) suggested that what was needed was to obtain data on the prevalence of constellations of depressive symptoms rather than individual symptoms.

From the limited evidence available, it would appear that depression in children is associated with trauma involving loss or separation (Cytryn & McKnew, 1972; Philips, 1970; Poznanski & Zrull, 1970), depressive illness in the family (Brumback, 1970; Brumback, Dietz-Schmidt, & Weinberg, 1977; Cytryn & McKnew, 1972; McKnew & Cytryn, 1973; Poznanski & Zrull, 1970); and parental rejection or depreciation (McKnew & Cytryn, 1973; Poznanski & Zrull, 1970). Depression has been associated with poor school performance not explained by intelligence or ability (Brumback, 1979; Brumback, Jackoway, & Weinberg, 1980; Colbert, Newman, Ney, and Young, 1982) and to school phobia (Brumback, Dietz-Schmidt, & Weinberg, 1977). Self-esteem has been negatively correlated with depression at least in children older than 8 years (Brumback, Staton, & Wilson, 1980; Brumback & Weinberg, 1977a; Connell, 1972; Lefkowitz & Tesiny, 1980;

McConville, Boag, & Purohit, 1973; Moyal, 1977; Poznanski & Zrull, 1970). External locus of control has been correlated with depression (Lefkowitz & Tesiny, 1980; Leon, Kendall, & Barber, 1980; Moyal, 1977; Tesiny, Lefkowitz, & Gordon, 1980) and a variety of behavior problems, especially aggression and acting-out have been associated with depression (Colbert, Newman, Ney, & Young, 1982; Leon, Kendall, & Garber, 1980).

In the present exploratory study, the author started from the assumption that depression exists in childhood. The purpose of this study was to determine the prevalence of a depressive syndrome in a sample drawn from a normal population of grade 4, 5, and 6 children and to describe the characteristics of depressed children.

Scales measuring self-esteem, depression, and locus of control were administered to each subject in group settings. Information on intellectual ability and academic achievement was obtained from cumulative records on each student. Parents of each subject completed a questionnaire comprised of a checklist of concerns on children's behavior into which the DSM-III criteria for depression were embedded, together with a section requesting information on change and loss situations.

The data were analyzed to determine the incidence and distribution of depression in children based on information provided by parents, and based on information provided by the children. Scores on related variables were analyzed to determine if differences existed between depressed and non-depressed children in academic achievement, self-esteem, locus of control, change and loss situations, and behavior problems.

Importance of the Study

There is some evidence to show that affective characteristics of students can affect school achievement (Chapman, 1979). The participants of the Fourth Congress of the Union of European Pedopsychiatrists in Sweden in 1971 concluded that depressive states account for a large and important share of the mental disorders experienced by children and adolescents (Annell, 1972). The possibility exists that depressive features are the major source of underachievement for some students. In these instances, behavioral techniques and exhortions to do better will not only be ineffective in increasing the children's motivation, but may be instrumental in increasing the children's underlying depression (Hollon, 1970). It therefore becomes especially important to be able to recognize the symptoms of depression in order to obtain appropriate help for this group of children.

Depressive features can interfere with the development of the child. The withdrawal associated with depression can interfere with learning to handle social relationships. Poor attention span and concentration can interfere with learning skills needed as the basis for future learning. There is some evidence to show that depression found in childhood can carry over into adolescence and adulthood (Poznanski, Krahenbuhl, & Zrull, 1976); however, the child is more amenable to intervention strategies than the adult (Arieti & Bemporad, 1978). It is important to recognize and diagnose depressions as early as possible in order to minimize the interference with normal development, and to most effectively intervene and help the depressed person to overcome the depression.

Little normative data are available on depressive symptoms and/or syndromes in childhood (Costello, 1980; Lefkowitz & Burton, 1978). It has been suggested that different cultures may be more prone to the development of depression than others (Freden, 1982); however, in reviewing the literature on the prevalence of childhood depression, Kashani, Husain, Walid, Shekim, Hodges, Cytryn, and McKnew (1981) reported on only one study conducted in Canada and four in the United States. It would be of benefit to obtain normative data from within our own culture.

Most of the earlier research has lumped together toddlers, school-age children, preadolescents, and adolescents (Nowels, 1977). Attention needs to be given to the developmental process, and how depressive manifestations vary at different stages of development (Anthony, 1975; Dweck, Gittelman-Klein, McKinney, & Watson, 1977; Malmquist, 1971; Nowels, 1977).

Overview of the Study

In Chapter I the variables of this study were introduced and the importance of the study was established. Chapter II provides a review of related literature including an overview of theoretical models of depression, developmental issues in childhood depression, diagnostic criteria, and measures used to assess childhood depression. Lastly, the major research regarding the incidence of childhood depression and variables related to childhood depression was reviewed. The research questions and definitions are presented in Chapter III. The design and procedures of the study are described in Chapter IV. Chapter V contains an analysis of the data obtained, and Chapter VI is a discussion of the results, conclusions drawn, implications for future research, educational implications, and clinical implications.

CHAPTER II

REVIEW OF THE LITERATURE

Theoretical Models and Childhood Depression

Numerous theoretical models have been proposed to explain depression. Most of the research on childhood depression has been based on observational data rather than on conceptual models; however, our conceptual view determines our interpretations of the data as well as what we are permitted to think about and, therefore, each model has implications for research and theory on childhood depression. Following is a brief overview of some of the major theoretical approaches to depression.

Psychoanalytic Theories

Freud postulated that maximizing instinctual gratification while minimizing punishment and guilt was the basic tendency of each individual (Maddi, 1972). Compromise was necessary because of the inevitable conflict between the individual, whose instincts were selfish, and society, which aimed at the common good. Three levels of mental functioning were proposed: (a) the id, consisting of instincts, which functioned to maximize gratification regardless of external reality; (b) the ego, consisting of thinking processes, which functioned to facilitate reality and which permitted only those instincts unlikely to bring about guilt and punishment to remain in the consciousness; and (c) the superego, consisting of internalized values and taboos of society as taught by the parents, which set restrictions on which forms of instinctual gratifications were permitted, made guilt possible, and was the internal mechanism of punishment. When punishment or guilt was threatened because of an instinctual impulse, anxiety occurred. Defense mechanisms were put into operation to avoid anxiety by removing the instinctual impulse from consciousness.

Most reviews on depression begin with Abraham's work of 1911 and Freud's work of 1917 comparing depression with the normal grief and mourning process. To Abraham, the depressed person internalized the deficiencies and weaknesses which he had unconsciously attributed to a lost person, and directed aggression toward himself because of these deficiencies (Becker, 1977; Mendels, 1970). Freud differentiated depression from mourning by the presence of self-reproach and loss of self-esteem in the depressed person (Arieti & Bemporad, 1978). He postulated that the depressed person directed the reproaches against the lost person onto his own ego. The superego became the instrument of punishment.

Both Klein (1948) and Benedek (1956) related depression to the early mother-child relationship. Klein described a developmental stage called the "depressive position" where the child had to resolve conflict arising from the good and bad feelings directed toward the mother that became internalized. Failure to resolve this conflict set the stage for later depressions. Benedek's "depressive constellation" arose from difficulties in the feeding situation where a state of "bad mother equals bad self" developed and led to future depressive episodes (Mendels, 1970, p. 51).

Bonime (cited in Arieti & Bemporad, 1978; Becker, 1979) believed that depression resulted from a childhood that lacked nurturance and support. He postulated that depression was disguised hostility whereby the individual manipulated compliance from others, denied his own self-reliance, and punished others for failing to fulfill his needs.

Rie (1966) stated that the mechanisms of depression required the development of a superego as well as a well-developed ego. Because the child had not yet reached the required stage of development, depression in childhood was psychodynamically impossible.

Ego Psychology

Some theorists focussed on the individual's response to events and a conflict within the ego rather than an unconscious intrapsychic conflict between the ego and the superego. Bibring (1953) perceived depression as the result of threats to or loss of self-esteem because of the individual's inability (real or imagined) to live up to some highly valued expectation or desired ideal. He proposed three groups of aspirations of the individual necessary for maintaining self-esteem. These were:

> (1) the wish to be worthy, to be loved, to be appreciated, not to be inferior or unworthy; (2) the wish to be strong, superior, great, secure, not to be weak and insecure; and (3) the wish to be good, to be loving, not to be aggressive, hateful and destructive. (p. 24)

When the individual perceived himself as helpless and incapable of fulfilling the goals necessary to maintain self-esteem, the result was depression.

Sandler and Joffe (1965) viewed depression as a basic affect like anxiety that became abnormal when it occurred in inappropriate circumstances, lasted too long, or the person was unable to make appropriate adaptations. The depressed person felt he had lost something essential to his well-being and helpless and unable to reverse the loss.

Bemporad (in Arieti & Bemporad, 1978) questioned whether the self-concept was sufficiently developed in early childhood for the child to experience a loss of self-esteem. However, this reservation did not apply to later childhood. Sandler and Joffe (1965), from their observations of children, felt that the concepts could be applied to children of all ages.

Interpersonal and Cultural

Cohen and her associates (Cohen, Blake, Cohen, Fromm-Rechman, & Weigert, 1954) found that manic-depressives came from families that were set apart in some way from the community and that it was the individual's role to improve the family's position. Because of their family background, these individuals developed a personality style whereby they needed constant external support.

Adler (1962, Anshbaoher & Ansbacher, 1956) took the position that by the age of five the individual had developed a style of life. This referred to the convictions he developed to organize experience, to understand it, to predict it, and to control it. These convictions were derived from the perception the individual had of his environment. He was affected by how he perceived his position in the family constellation (birth order) and family atmosphere. If through evaluations of his own abilities the child perceived that he could find his place in the group through constructive endeavors, he would pursue the useful side of life. Should he feel that he could not attain the goal of having a place in this fashion, he would become a discouraged child and behave in a disturbed or disturbing manner in an attempt to find a place. On the basis of his experiences the child reached certain conclusions about himself and acted as if they were true even if, in fact, they were not. The depressed individual was described as one who had a life-style of being dependent on achievements and on support of others. He suggested that these individuals would use displays of inadequacy in order to obtain the needed support and submission from others.

Becker (Freden, 1982) postulated that striving for self-esteem and avoidance of anxiety was fundamental to human nature. Self-esteem was acquired through action in a social setting. The depressed person had too few relationships, was not critical enough of those relationships, and strove to please others rather than himself. He had unrealistic expectations of himself, and it was his failure to live up to those expectations that caused depression.

All behavior and development takes place within a social mileau. Adler (1962) has proposed that the individual has developed his life-style by a very early age.

Biological

Biochemical. Reviews of biological studies and depression (Akiskal & McKinney, 1975; Arieti & Bemporad, 1978; Fawcett, 1978; Mendels, 1970) have suggested that important biological changes take place during depression. Certain chemicals, called monoamines or biogenic amines, are released at nerve endings as a result of the firing of one neuron and serve to stimulate the firing of the next neuron (Fawcett, 1975). Animal studies have indicated that these neurotransmitters may be involved in the ability of the organism to respond to reinforcement and to experience pleasure as well as in psychomotor functions and biological drives (Akiskal & McKinney, 1975). It has been hypothesized that these neurotransmitters are involved in human depressions. Research on depression has dealt primarily with two major classes of the neurotransmitters: the catecholamines (norepenephrine and dopamine) and the indoleamines (largely serotonin).

Schildkrat (1965, cited in Mendels, 1970) proposed that some, but not all, depressions were associated with the deficiency of the catecholamines, particularly norepinephrine, at important sites in the brain, with elation being associated with an excess of these chemicals. Fawcett

(1975) reviewed the research on the metabolites of the catecholamines in the urine or cerebrospinal fluid of depressed patients. The majority of the studies found decreased levels of the metabolite in the urine of about 2/3 of the depressed patients when compared to nondepressed controls. Some, but not all, of the studies on cerebrospinal fluid confirmed this finding.

The possibility that the decreased level of the catecholamine metabolites could be an artifact of the decreased physical activity of the depressed patient has been raised. Results of studies using exercised patients have been inconsistent (Akiskal & McKinney, 1975; Fawcett, 1975).

More studies are needed to support the assumption that the metabolites found in the urine or cerebrospinal fluid reflects the availability of the norepinephrine found in the brain (Fawcett, 1975). Variations in the excretions have also been found in relation to general stress, so the relationship to depression has not yet been established (Arieti & Bemporad, 1978).

The literature on the indoleamine serotonin and its metabolites has been contradictory. Fawcett (1975) reviewed the literature and stated that although the majority of studies found decreased levels of the metabolites of serotonin in the urine and cerebrospinal fluid of depressed patients, a few studies did not. Some of the studies which found decreased levels in the cerebrospinal fluid, have also shown persistently low levels after recovery.

Two major strategies have been employed to test the catecholamine hypothesis versus the serotonin hypothesis. The first, the precurser loading technique, involved administration of the precurser amino acids and observing the results (Akiskal & McKinney, 1975).

Coppen and his associates (cited in Akiskal & McKinney, 1975; Arieti & Bemporad, 1978) found the serotonin precurser, L-tryptophan, to be an effective antidepressant. Prange (cited in Akiskal & McKinney, 1975) found this drug to be effective in mania as well. The catecholamine precurser, levodropa, has been found to be ineffective for use in depression except for use with a small group of retarded depressives (Akiskal & McKinney, 1975). Some studies (Akiskal & McKinney, 1975; Fawcett, 1975) indicated that administration of levodropa to bipolar depressives resulted in a switch to mania without any decrease in the depression, a result also found with tricyclic antidepressant drugs. However, levodopa has been found to lower serotin levels as well as to increase catecholamine levels in the brain

(Akiskal & McKinney, 1975). This suggested methodological problems in the precursor loading strategy as many neurochemical systems may be affected simultaneously.

The second strategy involved the postmortem study of the metabolites of the neurotransmitters in the brains of patients who had committed suicide. This approach also had methodological problems in that suicide may result from a number of disorders (Akiskal & McKinney, 1975); the postmortem analysis may not accurately reflect the antemortem conditions (Akiskal & McKinney, 1975); and numerous other variables such as prior medication, changes at death, and age may affect the results (Fawcett, 1975). Akiskal and McKinney (1975) reported on two studies of suicides where the hindbrains showed decreased levels of serotonin but normal levels of norepinephrine. In studies comparing suicides with accident victims, Fawcett (1975) reported that two studies showed lowered serotonin levels; one study did not. None of the studies indicated significant differences between suicides and those dying a natural death in the norephinephrine concentrations.

There appeared to be some consensus on the possible role of lowered serotonin levels in both depression and mania, and elevated levels of catecholamines in the switch from depression to mania (Akiskal & McKinney, 1975). The role of the catecholamines in depression is controversial. Prange and associates (cited in Akiskal & McKinney, 1975; Arieti & Bemporad, 1978; Fawcett, 1975) postulated the permissive amine hypothesis of affective disorders. He proposed that initial lowered levels of serotonin may make an individual vulnerable to depression when norepinephrine levels are low and to mania when norepinephrine levels are high.

Mendels (1970) has noted other isolated findings of biochemical changes during depression. These included disturbances of the sodium and potassium balance, significant changes in the amount of calcium excreted in the urine, and alterations in the way glucose is utilized by the body.

It is not known if the biochemical changes cause the depression, or if the depression causes the biochemical changes. Seligman (1975) has found that by exposing animals to uncontrollable shock, biochemical changes take place. Akiskal and McKinney (1975) have suggested that regardless of what factors initiate the depressive behaviors, once a severe or chronic depressive state is reached, the depression becomes biologically autonomous.

Although the biochemical model has scarcely been explored with children, research in this area is feasible. Kashani, Husain, Walid, Shekim, Hodges, Cytryn, and McKnew (1981) reviewed the literature in this area. They noted that Cytryn and associates (1974) found changes in the excretion of urinary metabolites in depressed children, but these changes were not consistent and tended to vary with age. McKnew and Cytryn (1979) compared depressed and nondepressed children and found decreased serotonin metabolites in depressed children, but no significant differences in norepinephrine. It was noted that several well-designed studies were currently being conducted, but results have not yet been published.

Genetic. Results from twin, family, and adoption studies have suggested an heredity component in the development of affective disorders (Kashani, Husain, Walid, Shekim, Hodges, Cytryn, & McKnew, 1981; Mendels, 1970). Because identical twins have exactly the same genetic endowment, concordance rates for twins have been offered as supporting evidence for a genetic component in the affective disorders. Slater (1953, cited in Mendels, 1970) found a 57% concordance rate for identical twins, and a 29% concordance rate for nonidentical twins in a study of 38 twins. DaFonseca (1959, cited in Mendels, 1970) found concordance rates of

60% for identical twins and 21% for nonidentical twins. In an attempt to distinguish between the contributions of genetics and family upbringing, Shields (1962, cited in Mendels, 1970) studied 44 identical twins reared together and 44 identical twins reared separately. Among the separated twins he found one set concordant for affective disorders and three sets discordant for affective disorders. In addition, he noted that the degree of concordance for the separated group was the same as the nonseparated group for such variables as anxiety traits, emotional lability, rigidity, and cyclothymic features. Tsuang (1978) found overall concordance rates of 76% for identical twins and 19% for nonidentical twins in seven twin studies. In his studies of identical twins reared apart, he found a concordance rate of 67%. The findings of higher concordance rates for identical twins compared to nonidentical twins suggested that genetic factors played an important role in the transmission of affective disorders (Mendels, 1970).

Mendlewicz and Rainer (1977) attempted to separate the roles of heredity and environment by comparing the adoptive parents of manic-depressive persons with their biological parents. They found that affective illness in the biological parents was significantly higher than that found in the adoptive parents of the same manic-depressive offspring. In addition, they found that affective illness was significantly higher in the biological parents of bipolar adoptees compared to the biological parents of normal adoptees. No father-to-son transmission of manic-depressive illness was found in the entire sample. This latter finding tended to support the findings of Winokur (1975) who suggested that affective disorders are transmitted in an x-linked fashion.

Behavioral Reinforcement Theories

Behavioral theorists have focused on the maladaptive behaviors emitted by depressed persons rather than on feelings and cognitions. Their concern has been to explain why and how depressed individuals have failed to avoid aversive elements and initiate positive contacts within the environment (Becker, 1977).

Fester (1974, cited in Becker, 1977) postulated that the main cause of depression was weakness or absence of adjustive behaviors. He suggested that depressed individuals had experienced aversive relations with significant others and had learned that the aversive elements could be avoided or reduced by passive or avoidance behaviors. These passive or avoidance responses were generalized, thus placing the individual's behavioral repertoir on an extinction schedule, and adjustive behaviors were weakened or inhibited.

An alternate explanation proposed by Fester was that inadequate or inappropriate reinforcement in the depressed individual's early environment led to a distorted perception of the environment. As a result, the individual failed to learn appropriate responses to potentially positive reinforcers and developed a number of nonreinforceable behaviors. These nonreinforceable behaviors were maintained despite a low activity rate because of the lack of opportunity for differential reinforcement and discrimination learning to occur.

Lewinsohn (1974) postulated that depression resulted from a low rate of "response contingent positive reinforcement." The low rate of positive reinforcement could result from (a) the individual finding few events to be reinforcing, (b) a low level of reinforcing events in the environment, or (c) the individual not having the appropriate social skills to emit behaviors that would elicit reinforcement from the environment. The low rates of response contingent positive reinforcement became an unconditioned stimulus for eliciting depressive symptoms such as dysphoria and fatique.

Costello (1972) focussed on the loss of reinforcer effectiveness. He suggested that this loss resulted from biochemical factors in endogenous depressions and from a disruption of a chain of behaviors in other depressions. The effectiveness of all components of the chain was thought to be contingent upon completion of the entire chain. Therefore, the loss of any one of the reinforcers of the chain affected all of the other components of the chain and resulted in a loss of reinforcer effectiveness.

Wolpe (cited in Akiskal & McKinney, 1975; Becker, 1977) proposed that chronic frustrations in an individual's life led to chronic anxiety. When the anxiety could not be reduced by the individual's usual behavior patterns, a depressive syndrome characterized by passivity and hopelessness developed.

The behavioral models lend themselves to research with children as avoidance behaviors or reduction of positively reinforced responses are possible in even the youngest child.

Cognitive Distortion Models

Beck (1967) postulated "that the way an individual structures his experience determines his mood" (p. 24) and basically saw most depressions as disorders of thinking. He proposed a "cognitive triad" whereby the depressed person viewed himself, his experiences (his world), and his future in a negative way. The person systematically distorted his experience in a way negative to himself. Systematic errors included arbitrary inference (negative conclusions not supported by evidence), selective abstraction (focus on a detail out of context), overgeneralization (conclusion from one example), magnification and minimization (exaggerating or underestimating the significance of an event), and inexact labelling (affective reaction proportional to the descriptive labelling rather than the actual intensity of the event).

Beck felt that the basis for these cognitive distortions lay in early traumatic experiences which conditioned or sensitized the individual to react to certain types of situations from a negative viewpoint. The individual developed his concepts of himself from experiences, attitudes and opinions communicated to him by others, and identifications. From his experiences, he formed a negative generalization about himself, placed a negative value judgement on that attribute, and held himself responsible for having the attribute. The individual became sensitive to situations which involved the negative attribute, and these situations became the precipitators that set the depression in motion.

Arieti and Bemporad (1978) also proposed that "the problems of the depressive can be understood as the perpetuation of an inaccurate mode of cognitively processing experience that was formulated in childhood and crystallized in adult life" (p. 423). Due to childhood training, the patient learned that self-esteem was dependent upon the nurturance from a dominant other and that without the dominant other he was basically helpless and unworthy. The individual developed a fear of autonomous gratification as well as structures that attempted to control the gratifying other and ensure the needed gratification would be forthcoming. These internal cognitive structures predisposed the individual to recurrent depressive experiences and the inability or helplessness in defending against the depression.

Kovacs and Beck (1977) have suggested that the cognitive distortion models are particularly useful in research with children because they can be integrated with theories of cognitive development and can be empirically tested. A children's depression inventory is being developed in order to facilitate future research with children. Kashani, Husain, Shekim, Hodges, Cytryn, and McKnew (1981) indicated that the incidence of low self-esteem and poor body image in sad children suggest that cognitive models are useful for application to research with children.

Learned Helplessess

Seligman's (1975) theory of learned helplessness resulted from his experiments with animals. He found that when dogs were exposed to a series of painful stimuli in situations where escape was impossible, they gave up and helplessly endured the painful shocks even in later trials when escape was possible. The dogs had learned that their responses had no effect on the painful stimuli and had generalized this learning to future trials. These findings were generalized to human depression.

Seligman proposed that the depressed individual has learned that there is no relationship between his responses and the rewards he receives from the environment. It is not the experience of traumatic events but rather the lack of control over the original trauma that results in the individual forming the cognitive set that reinforcers and responses were independent. This cognitive set produced interference with future learning of adaptive behaviors for dealing with painful events. To the individual, behavior became meaningless as it was ineffective in bringing about reinforcement. When the individual felt that he had lost all control over the environmental reinforcers, and perceived himself as being unable to alter the situation, depression ensued.

The learned helplessness model contains elements of both the behavioral reinforcement models and the cognitive distortion models, and is a useful model for research with children.

Integrative Models

Akiskal and McKinney (1975) concluded that depression "represents the feedback interaction of three sets of variables at chemical, experiential, and behavioral levels--with the diencephalon serving as the field of action" (p. 299). Pathways to depression included genetic factors, developmental events, physiological stressors, and psychological stress.

Bemporad (Arieti & Bemporad, 1978) concluded his review of theoretical models with the possibility that depression may result from different causes in different individuals. He saw depression as "the final common pathway for various processes that alter the psychological equilibrium in different patients" (p. 56).

Developmental Issues

As Anthony (1975) pointed out, if we are to accept the view of Piaget (Piaget & Inhelder, 1969) that affective, cognitive, and social development influence each other and develop along parallel lines, we would expect the manifestations of depression to be radically different at different developmental stages. Malmquist (1971) indicated a critical need to define characteristics of childhood depression, particularly in the context of overall development. In studying depression in children, it is important to look at what aspects of behavior and cognitive functions (i.e. self-concept) are altered at various developmental stages (Dweck, Gittelman-Klein, McKinney, & Watson, 1977).

Although various researchers have expressed the need to look at childhood depression in the context of overall development, there has been a tendency in past research to lump together all ages of childhood from toddlers to adolescents (Nowels, 1977). Very few attempts have been made to look at depressive symptoms from a developmental perspective.

Infancy (Birth to 2 years)

In the classic study of hospitalized children by Spitz (1946), the concept of anaclitic depression was developed. He discovered that infants who were deprived of adequate nurturing failed to thrive, withdrew, became apathetic, and in some cases died. Bowlby (1973) studied infants' behaviors following loss of someone to whom they were attached, and indicated that they went through a typical sequence of protest, despair, and detachment. Fischhoff (1975, cited in Philips, 1979) found evidence to support the view that severe malnutrition was associated with lack of social, emotional, and cognitive stimulation in the home.

Ossofsky (1974) studied endogenous depression in children and found depression in children ages 1 to 3 to be manifest by irritability, excessive crying or fretfulness, and marked insomnia. She found a history of insomnia beginning in the neonatal period to be common. Cytryn and McKnew (1974) suggested that depression in infants was relatively short-lived as long as a substitute love-object was available.

Bemporad (Arieti & Bemporad, 1978) criticized the diagnosis of depression in infants and suggested that we are projecting adult affects onto the infant. According to Piagetian theory, the infant is in the sensory-motor stage of development, with mental life primarily consisting of innate reactions, habit sequences, and possibly physical discomfort.

Early Childhood (2 years to 6 years)

Cognitively the child has gained the capacity for observational learning and mental representation through imitation, but the child is still egocentric and has not yet gained the ability to think conceptually (Philips, 1979). The child in this stage of development is oriented toward actively doing rather than toward being nurtured.

Bemporad (Arieti & Bemporad, 1978) postulated that the roots for development of depression lies in the child's psychological individuation from the mother. The child has the choice of satisfying his own pleasure in the experience of will and risking censure, or of inhibiting his spontaneity and ensuring love. The maladapted child exhibits seriousness, lack of spontaneity, and clinging to the parent. While this child may appear sad and frightened, Bemporad felt he could not be called depressed as he responds primarily to rewards and punishments from the environment rather than from within.

Philips (1979) postulated that depression can be diagnosed from examining the caretaker-child dyad and their reactions to each other. He felt that the child may identify with a depressed mother or develop depression as a reaction to parental disability. Depressed behaviors are manifest by severe separation anxiety, hyperactivity, learning disorders, and somatization.

Middle Childhood (6 years to 8 years)

In middle childhood, we find the beginning of conceptual thinking (Philips, 1979). However, the child still responds to the environment without much thought to how good or bad he is (Arieti & Bemporad, 1978). He still confuses fantasy and reality and cannot yet form a stable concept of self-worth.

Bemporad (Arieti & Bemporad, 1978) found that children will experience prolongued sadness in response to chronic frustration, but will defend themselves against unpleasant feelings. The defences may explain the conditions described as depressive equivalents or masked depression. The moods of sadness are rarely sustained, the child will respond to external changes, and there is no evidence of guilt or loss of self-esteem.

Philips (1979) described depressive symptoms at this age as being manifest by school refusal, psychophysiologic symptoms, a variety of affective symptoms, aggression, learning problems, and hyperactivity.

McConville, Boag, and Purohit (1973), in a study to determine types of childhood depression, observed children in a residential setting for six weeks and noted the children's verbal expressions. They found 6 to 8 year olds to be primarily in the "affective depressed group." This group was characterized by "feelings of sadness, helplessness, loneliness, loss and a rather unspecified feeling of being bad" (p. 134).

Late Childhood (8 years to 12 years)

In evaluating the cognitive development of the child at this stage, Bemporad (Arieti & Bemporad, 1978) noted a thought system that includes a sense of responsibility toward others, internalization of values, and a recognition of self that can be morally evaluated. This child no longer responds to the environment in an automatic manner, but rather the affective state is a result of an evaluation of experience. Only the lack of future orientation differentiates depression at this stage from depression in the adult; the child simply does not think about the future.

Philips (1979) found symptoms of depression in late childhood to be similar to those in adults. He found children were overly sensitive and easily hurt, had self-deprecatory feelings, and vacillated between self-criticism and blaming others. Their relationships were tenuous or tentative.

McConville, Boag, and Purohit (1973) found depression in the 8 to 10 year olds to be primarily characterized by "feelings of negative self-esteem, of being unable to help or do things for others and an inability to be liked, along with expectations of being used and chronic feelings that the situation will not change" (p. 134). They found that this negative self-esteem type of depression appeared to gradually replace the affective type of depression found in younger children.

In the 10 to 13 year old group, they found some evidence of a guilt depression characterized by "feelings of being wicked or hated because of actions, or of being justly punished. Wishes to kill oneself or to be dead were associated with restitution fantasies" (p. 134). The negative self-esteem type of depression was also commonly found in this age group.

Summary

From the minimal work available in this area, it would appear that manifestations of depression in childhood do vary with the child's age and cognitive development. Depression in infancy has been manifest by failure to thrive, withdrawal, and apathy in response to inadequate nurturing. Irritability, excessive crying, and marked insomnia have been noted as symptoms of endogenous depression.

Children in early and middle childhood have not yet developed evaluative thinking and, therefore, respond primarily to rewards and punishments in the environment rather than to internal feelings. In early childhood, the response is to the caretaker, with the maladapted child exhibiting seriousness, lack of spontaneity, and severe separation anxiety. In middle childhood, depression is manifest by prolongued sadness, loneliness, helplessness, and loss but the child will respond readily to external changes.

Only upon reaching late childhood, has the child the cognitive development to react to an evaluation of his experiences rather than directly to the environment. With the recognition of a self that can be morally evaluated, depression in late childhood is characterized by lowered self-esteem or self-depreciation. With the development of a sense of responsibility toward others and internalization of values, we also find the beginnings of guilt as a manifestation of depression.

Diagnostic Criteria

The confusion surrounding the diagnosis of childhood depression has been increased by the fact that initially each researcher developed his own set of diagnostic criteria (Welner, 1978). Among the investigators that have acknowledged that childhood depression exists, there have emerged two schools of thought: (a) childhood depression requires diagnostic criteria different from that used with adults because of the child's limited ability to understand and verbalize feelings; and (b) childhood depression can be diagnosed using adult criteria with slight modifications. Measures used to rate the depression according to the criteria are outlined in the following section. (See pages 50 to 60).

Masked Depression

One viewpoint in the diagnosis of childhood depression, particularly among earlier researchers, was that children could be diagnosed as depressed provided we use criteria different from that used with adults (Glaser, 1968; Renshaw, 1973, 1974; Toolan, 1962, 1978). It was proposed that depression in children was masked by symptoms not readily identifiable with the condition (Glaser, 1968) or depressive feelings were replaced by behavioral problems (Toolan, 1962).

A wide variety of symptoms and/or presenting complaints have been outlined as masking depression and/or listed as "depressive equivalents." Among the more common of the depressive equivalents are: acting out behaviors, defiance, disobedience, and delinquency (Cytryn & McKnew, 1974; Glaser, 1968; Lesse, 1979; Toolan, 1962, 1978); aggressive and destructive behavior (Cytryn & McKnew, 1974; Friedman &

Doyal, 1974; Lesse, 1979); school phobia or avoidance and truancy (Friedman & Doyal, 1974; Glaser, 1968; Lesse, 1979; Renshaw, 1973, 1974; Toolan, 1962); school failure and underachievement (Cytryn & McKnew, 1974; Friedman & Doyal, 1974; Glaser, 1968); physical complaints, such as headaches, abdominal pain, and vomiting (Cytryn & McKnew, 1974; Friedman & Doyal, 1974; Glaser, 1968; Lesse, 1979; Renshaw, 1973, 1974; Toolan, 1978); and temper tantrums and angry outbursts (Blumberg, 1978; Glaser, 1968; Lesse, 1979; Renshaw, 1973, 1974; Toolan, 1962). Other symptoms used in the diagnosis of masked depression are: running away (Lesse, 1979; Renshaw, 1974; Toolan, 1962); hyperactivity (Cytryn & McKnew, 1974; Friedman & Doyal, 1974); restlessness and boredom (Lesse, 1979; Toolan, 1962); accident proneness and self-destructive behavior (Lesse, 1979; Toolan, 1962); anorexia and food refusal (Blumberg, 1978; Lesse, 1979; Toolan, 1978); encopresis and enuresis (Blumberg, 1978); and fire setting (Renshaw, 1974).

The relationship of these symptoms to depression has often been obscure and difficult to determine (Rie, 1966). Cytryn and McKnew (1974) used depressive themes in fantasy; verbal expressions of hopelessness, worthlessness, and rejection; as well as sadness and psychomotor retardation to diagnose the underlying depression. Other symptoms used to relate the depressive equivalents to depression are withdrawal or isolation (Glaser, 1968; Renshaw, 1974; Toolan, 1962), and depressive feelings such as sadness, feelings of inadequacy or worthlessness, and feelings of rejection (Glaser, 1968; Renshaw, 1974; Toolan, 1962).

Anthony (1975) and French (1979) have criticized the use of depressive equivalents as diagnostic criteria in that the list of symptoms is so comprehensive that it explains both everything and nothing at all. Bemporad (Arieti & Bemporad, 1978) and Costello (1981) have indicated that the concept of masked depression has added much to the confusion surrounding the existence of childhood depression. It was felt that this concept should be abandoned. Kovacs and Beck (1977) found many similarities between the criteria for depressed adults and children, and proposed that the concept of masked depression was unnecessary.

In a study of masked depression, Carlson and Cantwell (1980b) found that it was possible to diagnose these children using adult research criteria for the affective disorders. In some instances, they found a primary affective disorder; in others they found a secondary affective disorder with a behavior disorder. Although having previously proposed a diagnostic category of masked depression, Cytryn, McKnew, and Bunney (1980) have also proposed that children can be diagnosed by adult criteria. They found that children with masked depression were then diagnosed as either having a primary affective disorder or a conduct disorder with depressive features.

Modified Adult Criteria

Some investigators have taken the view that childhood depression can be diagnosed using adult criteria with slight modifications. Emphasis was placed on affective criteria rather than on the behavioral problems outlined as depressive equivalents. Although initially each investigator specified his own criteria, a number of investigators (Ling, Oftedal, & Weinberg, 1970; Weinberg, Rutman, Sullivan, Penick, & Dietz, 1973; Cytryn, McKnew, & Bunney, 1980) have worked toward establishing a more uniform set of diagnostic criteria for childhood depression.

Sandler and Joffee (1965) reviewed case records of 100 children to determine if children had a constellation of symptoms which would comprise a depressive mood. They found a number of children could be described as depressed using a combination of the symptoms of sadness, withdrawal, discontent, feelings of rejection or being unloved, inability or unwillingness to accept help or comfort, tendency to regress to oral passivity, insomnia, autoerotic or other repetitive activities, and difficulty in making sustained contact.

In a study to define depressive illness in children, Ling, Oftedal, and Weinberg (1970) established criteria similar to that used with adults. They considered a child depressed if he met any 4 of the following 10 criteria, with emphasis placed on recent changes.

1. Significant mood change
2. Social withdrawal
3. Increasingly poor performance in school
4. Sleep disturbances
5. Aggressive behavior (not previously present)
6. Self-depreciation and beliefs of persecution
7. Lack of energy
8. Somatic complaints other than headache
9. School phobia
10. Weight loss and anorexia

In a study to determine the nature of depression in childhood, Connell (1972) extracted from the literature a pattern of symptoms which were regarded as symptomatic of childhood depression. The symptoms she found to be associated with depression in childhood and to be used in diagnosing children who were described as persistently unhappy were as follows.

Symptoms Associated with Change in Affect

1. Negative self-concept
2. Irritability
3. Weeps frequently
4. Behavioral change (anergic/restless)
5. Feels rejected
6. Social withdrawal
7. Morbid ideas
8. Suicide threats/attempts

Pathophysiological Symptoms

1. Headache
2. Nausea, appetite loss
3. Abdominal pain
4. Enuresis/encopresis
5. Sleep disturbance

Other Symptoms

1. Compensatory symptoms--bulimia, stealing
2. Antisocial behavior--negativism, destructive acts fire setting
3. Anxiety

4. Hypochondriasis

Each symptom was credited as being present if it had existed for three months or longer.

McConville, Boag, and Purohit (1973) selected 15 items on the grounds of their clinical frequency in children who were described as depressed. They then classified these items into 3 types of depression found in children--affective depression, negative self-esteem depression, and guilt depression. The symptoms selected as criteria for each of the three types of depression were as follows.

Affective Depression

1. Sadness
2. Helplessness
3. Loneliness
4. Loss
5. Unspecified feelings of being bad

Negative Self-Esteem Depression

1. Negative self-esteem
2. Inability to help or do things for others
3. Inability to be liked
4. Expectations of being used
5. Chronic feelings that situation will not change

Guilt Depression

1. Feelings of being wicked
2. Feelings of being hated because of actions
3. Feelings of being justly punished
4. Suicide ideation
5. Restitution fantasies

Each symptom was rated as 0--absent, 1--mentioned infrequently, or 2--mentioned commonly on the basis of six weeks of observation.

Weinberg, Rutman, Sullivan, Penick, and Dietz (1973) used criteria for diagnosing depression with adults, modified it according to their experience with children, and established the following criteria to establish diagnostic criteria for depression in children. A symptom was considered present if at least one of the characteristic behaviors listed was considered to be a concern by the child and/or parent and was a change from the child's usual self.

A. The presence of both symptoms I and II.
   I. Dysphoric Mood
      Statements or appearance of sadness, loneliness, unhappiness, hopelessness and/or pessimism.
      Mood swings, moodiness
      Irritable, easily annoyed
      Hypersensitive, cries easily
      Negative, difficult to please

II. Self-deprecatory ideation
  - Feelings of being worthless, useless, dumb, stupid, ugly, guilty
  - Beliefs of persecution
  - Death wishes
  - Suicidal thoughts
  - Suicidal attempts

B Two or more of the following eight symptoms:

III. Aggressive behavior (agitation)
  - Difficult to get along with
  - Quarrelsome
  - Disrespectful of authority
  - Belligerant, hostile, agitated
  - Excessive fighting or sudden anger

IV. Sleep disturbance
  - Initial insomnia
  - Restless sleep
  - Terminal insomnia
  - Difficulty awakening in morning

V. Change in school performance
  - Frequent complaints from teachers ("day-dreaming," "Poor concentration," "poor memory")
  - Loss of usual work effort in school subjects
  - Loss of usual interest in nonacademic school activities
  - Many incomplete classroom assignments
  - Much incomplete homework
  - A drop in usual grades
  - Finds homework difficult

VI. Diminished socialization
  - Less group participation
  - Less friendly; less outgoing
  - Socially withdrawing
  - Loss of usual social interests

VII. Change in attitude toward school
  - Does not enjoy school activities
  - Does not want or refuses to attend school

VIII. Somatic complaints
  - Nonmigraine headaches
  - Abdominal pain
  - Muscle aches or pains
  - Other somatic concerns or complaints

IX. Loss of usual energy
  - Loss of usual personal interests or pursuits

(other than school, e.g., hobbies)
Decreased activity level; mental and/or physical fatigue
X. Unusual change in appetite and/or weight
Anorexia or polyphagia
Unusual weight change in past 4 months
C. These symptoms had to represent a change in the child's usual behavior.
D. These symptoms had to be present for a period of more than one month.
(p. 1072)

These criteria were later compared to the diagnostic criteria established for research with adults (Feighner, Robins, Guze, Woodruff, Winokur, & Munog, 1972) and were found to be similar to the adult criteria (Brumback, Dietz-Schmidt, & Weinberg, 1977).

The subcommittee on clinical criteria for the diagnosis of depression in children at the NIMH conference in 1977 proposed two essential features in the diagnosis of depression in children: "dysphoria" and "generalized impairment in response to previously reinforcing experiences, without the concomitant introduction of new sources of reinforcement" (Dweck, Gittelman-Klein, McKinney, & Watson, 1977, p. 153).

The third edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-III) by the American Psychiatric Association, has stated that the essential features of depression are similar in infants, children, and adults even though there are some differences in the associated features (1980, p. 211). Criteria for depression as outlined by the DSM-III are as follows.

> A. Dysphoric mood or loss of interest or pleasure in all or almost all usual activities and pastimes. The mood disturbance must be prominent and relatively persistent. . . .
>
> B. At least 4 of the following symptoms have each been present nearly every day for a period of at least 2 weeks (in children under 6, at least 3 of the first 4).
>
> 1. Poor appetite or significant weight loss (when not dieting) or increased appetite or significant weight gain . . .
> 2. Insomnia or hypersomnia
> 3. Psychomotor agitation or retardation . . .
> 4. Loss of interest or pleasure in usual activities . . .
> 5. Loss of energy; fatigue
> 6. Feelings of worthlessness, self-reproach, or excessive or inappropriate guilt (either may be delusional)
> 7. Complaints or evidence of diminished ability to think or concentrate . . .
> 8. Recurrent thoughts of death, suicidal ideation, wishes to be dead, or suicide attempts.
>
> (p. 213-214)

Recent reviews of diagnosis of childhood depression (Cytryn, McKnew, & Bunney, 1980; Kashani, Husain, Shekim, Hodges, Cytryn, & McKnew, 1981; Welner, 1978) have suggested that the use of adult criteria such as that proposed by Feighner and associates (1972) or the DSM-III is valid for use with children.

Measures Used to Assess Childhood Depression

The search for criteria for diagnosing childhood depression has created confusion as each researcher developed his own set of criteria (Welner, 1978). A relatively standardized, agreed-upon set of diagnostic criteria must be established before valid and reliable instruments can be developed. Recently, a number of researchers (Cytryn & McKnew, 1980; Kashani, Husain, Shekim, Hodges, Cytryn, & McKnew, 1981; Kovacs & Beck, 1977) have suggested that adult criteria (i.e. DSM-III) be used for assessment. In the interim, a variety of measures have been used for diagnosing childhood depression. Specific criteria have been outlined in pages 38 to 49.

The Interview

The majority of investigators have studied childhood depressions in clinical settings and have used the technique of interviewing the child and/or parents as a means of collecting information for diagnosis.

Connell (1972) used information obtained from interviews with the child and the parent to assign a symptom score using the criteria extracted from the literature. A symptom was credited only if it had existed for three months or longer. She found that the average symptom score for depressed children was 10.6 (of a possible 18); for controls the average was 2.6.

Weinberg, Rutman, Sullivan, Penick, and Dietz (1973) used an informal but structured interview of both parent and child to determine the presence or absence of each symptom. A child was considered to be depressed if the presence of both dysphoric mood and self-deprecatory ideation as well as two or more of the eight additional criteria was established. Symptoms had to be present for at least one month.

The 40 items listed under the 10 headings of the Weinberg and associates (1973) criteria was used to develop the Bellevue Index of Depression (BID) (Petti, 1978). Each item was rated for the absence or degree of severity (from 0--absent to 3--severe) from information provided by the child or the parent. The child had to meet the criteria according to Weinberg and associates (1973) and obtain a total score of at least 20 to be considered depressed. A statistically significant agreement was found between the diagnoses according to the BID and clinician's diagnoses. Most of the children diagnosed as depressed by the clinician but not the scale had symptoms of less than one month's duration.

Observation

McConville, Boag, and Purohit (1973) developed a scale of 15 items to assess types of depression. Trained child-care workers observed the children, particularly noting verbal expressions, and rated each item from 0--mentioned infrequently to 2--mentioned commonly. Interrater reliability was found to be about 80%. This scale would be limited to inpatient or residential settings to allow for continuous observation.

Projective Testing

In their earlier work, Cytryn and McKnew (1974) used projective techniques such as the Thematic Apperception Test and the Rorschach together with dreams and associations to television movies and books to determine the presence of masked depression. Depressive themes included "mistreatment, thwarting, blame or criticism, loss and abandonment, personal injury, death, and suicide" (p. 879). The child's verbal expressions and behaviors were also used as a means of determining the presence of depression. In their more recent work (Cytryn, McKnew, & Bunney, 1980), they advocated the use of DSM-III criteria to establish the diagnosis of depression.

Gordon, Lefkowitz, and Tesiny (1980) examined the usefulness of using structural characteristics of the Goodenough-Harris Draw-A-Person Test for diagnosing depression in children. They concluded that this procedure was of questionable validity in the diagnosis of childhood depression.

Questionnaires and Checklists

Peer Nomination Inventory of Depression (PNID). The feasibility of constructing a valid peer nomination technique to assess depressive symptoms in a normal population was explored by Lefkowitz and Tesiny (1980). They developed a 20 item scale (14 depression items, 4 happiness items, 2 popularity items) whereby each child would be judged by many children on each item. This instrument was tested on 452 boys and 492 girls in grades 4 and 5. Each item (e.g. Who often plays alone?) was read aloud twice and students were asked to draw a line through all names on the class list who fit the question. Additional data were gathered from self-ratings, teacher-ratings, personnel records, and census tracts to examine the validity and reliability of the instrument.

Analysis of the instrument indicated that no significant sex differences existed. Test-retest coefficients after two months were .79 for the total depression score and .74 for the total happiness score. Factor analysis indicated four factors which were labelled loneliness, inadequacy, dejection, and happiness. Treating nominators as items in a test, Lefkowitz and Tesiny calculated alpha coefficients for each class, and found a mean "alpha of .75, an acceptable level of interrater agreement" (p. 46).

To establish concurrent validity, the PNID correlated significantly with teacher-ratings of depression and self-ratings of depression according to modified versions of the Children's Depression Inventory (Kovacs & Beck, 1977) and the Self-Rating Depression Scale (Zung, 1965). To establish construct validity, eight predictions were made about children having high PNID scores and correlations with these variables were obtained. Six of the eight predictions (depressed intellectual functioning, social functioning adversely affected, low self-esteem, view of external control over events, poor school attendance, more frequent in lower socioeconomic status) were supported; while two predictions (heightened passive activity such as TV viewing and lower weight) were not supported. Lefkowitz and Tesiny felt that some evidence for discriminant validity was obtained because children categorized by mothers as being overly active did not differ significantly in mean PNID scores from those categorized as not being overly active.

Costello (1981) in reviewing this study, praised the thoroughness of the analysis but questioned the construct validity. He felt that the variables used could also be predicted by other disturbances and that further research was needed before construct validity had been established. He also suggested that the procedure of completing the PNID may have negative effects on the behaviors of the students involved.

Children's Depression Inventory (CDI). Kovacs and Beck (1977) modified the adult version of the Beck Depression Inventory for use with children 8 to 13 years. The CDI is a 27-item questionnaire with each item consisting of statements graded from 0--absent to 3--severe from which the child picks the most appropriate response. Total possible scores range from 0 to 54. Kovacs (1981) has suggested that a score of 9 is average for the normal school population, and for a diagnosis of depression a score of 19 is required.

Available data indicated acceptable internal consistency (alpha of .86), only one factor resulting from factor analysis, and no significant correlations with age or sex (Kovacs, 1981). Kovacs (1981) reported on a study which found significant correlations between CDI scores and independent global ratings ($r=.55$, $p < .001$), which suggested that the inventory taps a clinically valid entity.

Freedman and Butler (cited in Puig-Antich & Gittelman, 1982) compared 40 depressed children and 40 normal children and found that a CDI score over 9 correctly classified 88% of the depressed children and 90% of the normal children. It was concluded that the scale successfully discriminated between the two groups; however, in the absence of another psychiatric group, it was not clear if the scale successfully identified depression or general psychiatric disorder.

Blackman (1983), in an attempt to validate the CDI as an instrument for the diagnosis of depression, compared children age 6 to 14 years in a psychiatric clinic to a group of normal children. Children from the clinic were classified as nondepressed, mildly depressed, or moderately depressed according to independent psychiatric ratings. Significant positive correlations were found between CDI scores and clinicians' ratings of depression ($r=.49$, $p < .01$). The CDI scores were found to be significantly different between (a) nondepressed clinic and moderately depressed clinic groups; (b) normal/control and moderately depressed clinic groups; and (c) mildly depressed clinic and moderately depressed clinic groups. There were no significant differences in the scores obtained between (a) nondepressed clinic and mildly depressed clinic groups; (b) nondepressed clinic and normal/control groups; and (c) normal/control and mildly depressed clinic groups. Blackman concluded that the CDI was an effective screening measure for children with more pronounced depressive syndromes, and that it could be used as a severity measure in depressed groups. She suggested that for a diagnosis of depression, a cut-off score of 14 was more suitable in a clinic population, but that the suggested cut-off score of 19 be retained in the general population.

Children's Depression Scale (CDS). A research edition of the Children's Depression Scale (CDS) with preliminary norms was published by Lang and Tisher (1978). The scale was developed specifically for use with children using a definition of depression derived from empirical observations found in the literature. A modified form to gather information from significant adults was also provided. The scale was designed for use with children 9 to 16 years, but can be used with younger children if items are read aloud. It was designed for individual administration, but details of a paper and pencil format for large scale testing is available on request.

The scale consists of 66 items, 18 of which are positive. Each item is presented on a separate card, which the child places into 1 of 5 boxes marked very wrong, wrong, don't know/not sure, right, and very right. Items are scored from 1 to 5, with positive items scored in the reverse. Items are assigned to 1 of 8 subscales--affective response, social problems, self-esteem, preoccupation with own sickness or death, guilt, miscellaneous depression items, pleasure and enjoyment, and miscellaneous positive items. Total raw scores for each subscale can be converted to decile scores for comparison with normal populations.

Internal consistency using Cronbach Alpha was found to be high (alpha .96). Content validity was established by (a) items being selected from available reports in the literature; (b) depressed patients were asked to comment on whether items expressed their feelings; and (c) five recognized child psychiatrists made independent assessments. In an attempt to establish concurrent validity, predictions were made on the basis of the literature as to the direction of correlations with each factor on the IPAT scale. The direction of the correlations corresponded with the predictions. The authors felt that construct validity was established as the test was capable of discriminating between three groups, one of whom was known to be depressed. No significant differences were found in age, sex, or social class.

Caution was advised as the validation sample was extremely small, and further research is necessary to establish norms, validity, and reliability.

Kovacs (1981) criticized the validational data on methodological grounds and suggested the need for much additional work with the scale. However, she felt it represented a needed direction in assessment as it attempted to systematize and quantify aspects of depression.

Personality Inventory for Children (PIC). The 600-item Personality Inventory for Children (PIC) containing various clinical scales, one of which is a depression scale was developed by Wirt, Lachar, Klinedinst, and Seat (1977) to be completed by an observer of the child, preferably the mother. The 46-item depression scale consists of 10 factors --brooding and moodiness; social isolation; crying spells; lack of energy; pessimism and anhedonia; concern with death and separation; serious attitude; sensitivity to criticism; indecisiveness and poor self-concept; and uncommunicativeness (Leon, Kendall, & Garber, 1980). T scores are available according to age and sex.

Test-retest correlations were .94 for outpatients of a psychiatric clinic and .80 for normal children (Costello, 1981). Validity data were unavailable other than indications that scale scores were high for various clinical samples (Costello, 1981).

Leon, Kendall, and Barber (1980) found significant correlations between children's self-ratings of depression according to the Children's Depression Inventory (Kovacs & Beck, 1977) and the parents' ratings of children's depression according to the PIC, "indicating a moderate consistency between these two perspectives of childhood depression" (p. 231).

Despite the number of tests available to assess childhood depression, these tests are still experimental. Most rely on self-report or interview format. Although many have expressed doubts as to whether or not the child can accurately report depressive feelings, most researchers working with depressed children think the child is the best reporter of his/her current emotional state (Carlson & Cantwell, 1980b; Cytryn, McKnew, & Bunny, 1980; Puig-Antich & Gittelman, 1982). Information obtained from parents and teachers is important but it is difficult for them to be aware of the child's moods and feelings. Interviews with the child have also been found to be the best predictor of later psychopathology (Puig-Antich & Gittelman, 1982).

Incidence of Childhood Depression

In reviewing the literature on childhood depression, Kashani, Husain, Walid, Shekim, Hodges, Cytryn, and McKnew (1981) found that reported incidence varied greatly depending on the diagnostic criteria used and the populations studied. The issue was further confused by the fact that some investigators included adolescents in their studies while others did not. The ranges of the reported incidence in various settings were found to be as follows.

1.4/1,000 to 1.9%	General populations
40%	Neurological wards
25%	Residential nurseries
1.8% to 59%	Psychiatric inpatients
13.7% to 58%	Education diagnostic or school psychiatric centers.

Carlson and Cantwell (1980a) designed a study to determine the incidence of depressive symptoms, syndromes, and disorders in a psychiatrically referred group aged 7 to 17 years. The presence of depressive symptoms was determined from screening information; depressive syndrome from high scores on the Short Children's Depression Inventory by

Kovacs and Beck; and depressive disorder from semi-structured interviews of parents and children using DSM-III criteria. They found that as criteria became more rigid, the prevalence decreased--60% had depressive symptoms; 49% depressive syndromes, and 27% were diagnosed as having depressive disorders. Those diagnosed as having depressive syndromes but not meeting the criteria for depressive disorders were children with a variety of conduct or physical disorders who also complained of unhappiness, low self-esteem, and poor school performance. The 27% meeting the criteria for depressive disorders were comprized of 16% of the outpatients and 36% of the inpatients.

In order to determine incidence in a nonpsychiatric population, Kashani and Simonds (1979) studied children aged 7 to 12 from families attending a family practice clinic and from children born at the university medical centre. The DSM-III criteria was used to diagnose depression. They found that 1.9% of their sample met the DSM-III criteria for a depressive disorder; however, 17.4% of the sample indicated sadness as a distinct affect. When this latter group were compared to nondepressed, nonsad children, they showed significantly more somatic complaints, overactivity and restlessness, fighting, low self-esteem, and refusal to go to school. Kashani and Simonds suggested that this group may have a subclinical form of depression or may be showing the early manifestations of depression. They concluded that "because children change continuously and the clinical manifestations of depression may be related to the particular phase of development, . . . further research be conducted to study the frequency of associated symptoms of childhood depression in various stages of development" (p. 1204).

Lefkowitz and Burton (1978) indicated that our knowledge of childhood depression is based almost totally on clinical studies with little knowledge of incidence of depressive symptoms in the normal population. In their review of the literature, they found a high prevalence of selected symptoms among normal populations and suggested that these symptoms may be a normal stage of development. Costello (1980) suggested that what was needed was to obtain data on the prevalence of constellations of depressive symptoms rather than individual symptoms.

Childhood Depression and Related Variables

Although the majority of work in the area of childhood depression has been concerned with the existence of the concept, the manifestations of and diagnostic criteria for childhood depression, some work has been done in looking at related variables. An overview of the major findings follows.

Background Data

Cytryn and McKnew (1972) classified depressed children into three categories (acute, chronic, and masked) and studied the background variables of each. They found that acute depressives usually had a severe trauma involving object loss as a precipitating cause, families with mild to moderate neurotic problems but no gross psychopathology, and a history of some maladjustments such as stubbornness, negativism, or other passive-aggressive tendencies, but basically they were functioning relatively well prior to the onset of depression. Chronic depressives had a history of many separations and object losses, at least one parent with a history of recurrent depressive illness, and a history of marginal emotional and social adjustment. Masked depressives came from families with severe pathology and disorganization, but no clearcut depressive illness. The elements of psychopathology were as varied as the presenting symptoms.

A positive family history of affective disorders was found by a number of investigators (Brumback, 1979;

Brumback, Dietz-Schmidt, & Weinberg, 1977; McKnew & Cytryn, 1973; Poznanski & Zrull, 1970; Weinberg, Rutman, Sullivan, Penick, & Dietz, 1977). Brumback and associates (1977) and Weinberg and associates (1973) also found that binge drinking and alcoholism were found significantly more often in families of depressed children. Various forms of parental rejection or depreciation by parents were found to be significant in the children's backgrounds (McKnew & Cytryn, 1973; Poznanski & Zrull, 1970). Loss of a parent through death or divorce, or loss of involvement of the parent were commonly found (Cytryn & McKnew, 1973; Philips, 1979; Poznanski & Zrull, 1970). Cytryn and McKnew (1973) found that where loss of a parent led to depression there was an excessive dependency prior to the loss and the absence of an appropriate substitute afterward.

In looking at characteristics of children still depressed 6½ years after the initial diagnosis, Poznanski, Krahenbuhl, and Zrull (1976) found that the tendency was for depressed children to have lost their fathers by divorce, and for the nondepressed group to have lost a parent by death. The majority who were still found to be depressed had no parent to whom they felt they could relate.

Children of Depressed Parents

In a study comparing children of depressed, schizophrenic, and control mothers, Cohler, Grunebaum, Weiss, Gamer, and Gallant (1977) found that children of depressed mothers showed greater intellectual impairment and greater disturbance of attention (ability to deploy attention) than children of the other two groups. These findings were replicated in a follow-up study of the original sample three years later comparing children similar in age and verbal IQ (Grunebaum, Cohler, Kauffman, & Gallant, 1978). Although not shown in the original study, it was found that among the older children, maternal depression had an effect on the children's ability to concentrate. They concluded that the impact of maternal depression appeared to be primarily in the children's performance on cognitive tasks.

Welner, Welner, McCrary, and Leonard (1977) compared children of hospitalized depressed parents with children of a control group. Information was gathered by interviewing children and mothers separately. Depressed moods, death wishes, and frequent fighting were significantly more common in children of depressed parents (both mother and child interview); and these children were more persistent in finishing projects, more withdrawn (mother interview), had more unexplained headaches, and showed greater loss of interest in usual activities (child interview). The children were compared for the number of depressive symptoms and on diagnostic criteria (Feighner, et. al., 1972) for possible or definite depression. Twenty-five percent of all depressed parents had at least one child with 5 or more depressive symptoms (11% of the children); none of the control children had 5 or more symptoms. Seven percent of the children of depressed parents met the diagnostic criteria for definite or probable depression compared to none of the control children. It was concluded that parents with depression are more likely to have depressed children than well parents.

El-Guebaly, Offord, Sullivan, and Lynch (1978) compared the effects of alcoholic, depressive, and schizophrenic parentage on children. They found that the adjustment of children based on checklist information was not affected by the psychiatric diagnosis of the parents. Boys of sick fathers scored almost twice as high on the checklist as boys of sick mothers. The authors suggested that further research was needed to determine the effects of depressed fathers on boys.

The relative contributions of parental depression and child behavior to parental perceptions of the clinic-referred children were studied by Griest, Wells, and Forehand (1979). Parental depression was determined according to the Beck Depression Inventory; children's behavior by home observation; and maternal perceptions by a parent attitude test. They found a significant relationship between parental depression and parental perceptions of children; the more depressed parents perceived their children as more maladjusted. The children's behavior did not serve as a significant predictor of parental perceptions. They suggested that parental depression may affect which children are referred for treatment for noncompliant behavior problems.

Hyperactivity

Brumback and Weinberg (1977b) designed a study to assess the relationship between hyperactivity and depression. They found that 74% of the hyperactive children were also depressed, compared to 47% of the nonhyperactive children being depressed. Of the children diagnosed as being depressed, 63% were also hyperactive. The authors found that children who were both depressed and hyperactive may be either chronically hyperactive or experience episodic periods of hyperactivity worsening or only evident during periods of depression. They concluded that hyperactivity and depression can occur independently but are frequently associated.

Brumback, Jackoway, and Weinberg (1980) compared depressed and nondepressed children for hyperactivity. It was found to be equally common in both groups; but, hyperactivity in the depressed children was generally episodic, appearing or worsening with periods of depression, while in nondepressed children hyperactivity tended to be chronic and nonfluctuating. Brumback, Dietz-Schmidt, and Weinberg (1977) also found hyperactivity to be episodic in depressed children.

From clinical impressions rather than empirical research, Zrull, McDermott, and Poznanski (1970) suggested that there were striking comparisons that could be made between hyperactivity and agitation. They suggested that distractibility and poor concentration were similar, as were irritability and emotional unstability. They felt that the child's difficulty in self-control set the stage for the development of a poor self-image and for overreliance on external forces to aid in control or to sanction improvements in controlling behavior.

Davis (1979) proposed the existence of an identifiable syndrome suffered by those between 6 and 16 years which he labelled the manic-depressive variant syndrome of childhood. The necessary, primary criteria were affective storms, family history of affective disruption, hyperactivity, chronically disturbed personal relationships, and the absence of psychotic thought disorder. One or more of the secondary criteria (sleep disturbance, minimal brain dysfunction, abnormal EEG, enuresis, and associated neurological problems) were also required for diagnosis.

Leon, Kendall, and Garber (1980) found different patterns of behavior for depressed children and hyperactive children. They concluded that the two patterns did not appear to consist of a common behavioral disturbance.

Self-Esteem

From conceptual models of depression (i.e. Beck, 1967; Bibring, 1953), it would be expected that a negative view of the self or negative self-esteem would be related to depression. All investigators have included negative self-esteem self-deprecatory ideation, or feelings of inadequacy as part of the diagnostic criteria for diagnosing childhood depression. (See pages 38 to 49.)

Research has shown the correlations between self-esteem and depression to be in the expected direction. Poznanski and Zrull (1970) found the most frequent disturbance seen within the depressive symptomatology to be a negative self-image. Brumback and Weinberg (1977a) found the two characteristic symptoms of depression to be dysphoric mood and self-depreciation. In her study into the nature of childhood depression, Connell (1972) found that 17 out of 20 of her depressed subjects expressed a negative self-concept with all 20 showing social withdrawal and feelings of rejection. McConville, Boag, and Purohit (1973) found a negative self-esteem type of depression in children 8 years and older although younger children were characterized by an affective type of depression.

Brumback, Staton, and Wilson (1980) found that self-esteem as measured by the Piers Harris Scale improved considerably following drug treatment for depression. Also using the Piers Harris Scale, Moyal (1977) found self-esteem to be negatively correlated with depression. Lefkowitz and Tesiny (1980) found self-esteem as measured by the Coopersmith Self-Esteem Inventory to be negatively correlated with high scores on the Peer Nomination Inventory of Depression.

Locus of Control

Seligman (1975) postulated that a feeling of helplessness in controlling important reinforcers was central to the development of depression. This would suggest that external locus of control would be correlated with depression.

Leon, Kendall, and Barber (1980) found that depressed subjects attributed positive events to external causes and negative events to internal causes significantly more than nondepressed subjects. External locus of control as measured by the Nowicki-Strickland Children's Locus of Control Scale was found to be significantly correlated to depression (Moyal, 1977) and to high scores on the Peer Nomination Inventory of Depression (Lefkowitz & Tesiny, 1980; Tesiny, Lefkowitz, & Gordon, 1980).

School Problems--Cognitive Functioning

Brumback, Jackoway, and Weinberg (1980) examined the relationship between depression and intelligence test scores and achievement in school skills in children referred for educational assessment. In comparing depressed and nondepressed children they found no significant differences in age, sex, grade placement, IQ (Wechsler & Peabody), or Wide Range Achievement Test scores in reading, spelling, and arithmetic. They concluded that the lack of difference in the Wechsler and Peabody suggests that intellectual disturbance explained neither the poor school performance nor the cause of depression, but rather the poor school performance resulted from the depression, possibly due to depression-related disinterest in participation or defeatist, self-deprecatory feelings.

Brumback, Staton, and Wilson (1980) postulated that childhood depression may significantly impair cognitive functioning and be sensitive to drug therapy. Following 2 to 3 months treatment with amitriptyline, they found improvement on the WISC-R; attention test battery, the visual retention, association, and memory subtests of the ITPA, the Goodenough-Harris Drawing Test, and the Trail Making Test B. No significant changes were found on the WRAT or the visual motor integration test. They concluded that the greatest cognitive impairment from depression was in the visual perceptive abilities.

Brumback, Dietz-Schmidt, and Weinberg (1977) found that school phobia was often found only during the active phase of depression. Brumback (1979), in studying the incidence of various behavioral and learning disorders in a general office setting, found that 39% of the children with learning disabilities also showed depression.

Using a population of 282 children referred to a child and family psychiatric unit, Colbert, Newman, Ney, and Young (1982) found that 54% (153 children) met the DSM-III criteria for depression. The majority of the depressed children (73%) were in regular classes, with 27% being in special classes for mentally retarded, autistic, emotionally disturbed, and learning disabled children. Seventy-one percent of the children in regular classes were underachieving by one or more years in one or more academic areas according to expectations based on intelligence and grade placement. Although the majority of children were achieving poorly in school, results of psychometric assessments did not explain the failure to learn as being due to specific learning disabilities. It was concluded that depression resulted in poor school performance in children who were intellectually capable and who did not have specific learning disabilities.

Behavior

Leon, Kendall, and Garber (1980) investigated the problems associated with depression in elementary school children. They found that depressed children showed significantly more conduct problems, anxiety, impulsive hyperactivity, and muscular tension at home, and more inattention-passivity at school than nondepressed children.

Although Colbert, Newman, Ney, and Young (1982) found that 54% of the children referred to a psychiatric unit were depressed, the major reason for referral was aggressive or acting out behavior. These children were frequently labelled as bullies, rebels, or delinquents. Teachers felt that laziness, belligerence, or in some cases, learning disabilities, accounted for their poor performance in school. Children who were withdrawn were more likely to be seen as depressed. They concluded that children often masked their depression in an effort to avoid upsetting adults, and that "depression in children is mixed with a persistent hope for relief, which manifests itself as a high level of attention-demanding activity" (p. 335).

Blackman (1983) found both the CDI and clinician's ratings of depression correlated significantly with the anti-social factor (stealing from parents, schools, or stores, and getting in trouble with the police) on the Connor's Parents Symptom Questionnaire. Significant correlations were not found with the conduct-disorder factor (aggressiveness, truancy, poor impulse control, and peer difficulties); however, the sample consisted of children referred to a psychiatric clinic with the most common reason for referral being "out of control" behavior.

Summary

From the limited evidence available, it would appear that depression in children is associated with trauma involving loss or separation, depressive illness in the family (especially mothers), and parental rejection or depreciation. The research relating hyperactivity to depression has been inconclusive. Hyperactivity and depression can occur independently but have frequently been associated. In some studies episodic hyperactivity has been found, with the hyperactivity worsening or occurring only during the period of depression. Self-esteem has been negatively correlated with depression at least in children older than 8 years. External locus of control has correlated with depression. A variety of behavior problems, especially aggression and acting-out have been associated with depression.

CHAPTER III

RESEARCH QUESTIONS AND DEFINITIONS

Research Questions

In this exploratory study, the author started from the assumption that depression exists in childhood and undertook to answer the following research questions.

Question 1--What is the incidence of childhood depression in a sample drawn from a normal population of children?

Question 2--What is the distribution of depressed children in a sample drawn from a normal population of children in terms of age and sex?

Question 3--Is there a significant difference between the scores obtained by depressed and nondepressed children on self-esteem as measured by the Culture-Free Self-Esteem Inventories for Children, Form A?

Question 4--Is there a significant difference between the scores obtained by depressed and nondepressed children on locus of control as measured by the Nowicki-Strickland Locus of Control Scale for Children?

Question 5--Is there a significant difference between depressed and nondepressed children on measures of academic achievement?

Question 6--Is there a significant difference between depressed and nondepressed children on the number of change situations experienced?

Question 7--Is there a significant difference between depressed and nondepressed children on the number and type of behavior problems?

Question 8--How do the tests used to measure depression relate to each other?

Operational Definitions

Depressive Disorder

The DSM-III criteria for a depressive disorder has been outlined on page 49. For the purpose of this study, a child was considered to have a depressive disorder if he/she met the DSM-III criteria according to information gathered by means of the parent questionnaire (DSM-III--A and 4 or more DSM-III--B symptoms).

Depressive Syndrome

Carlson and Cantwell (1980a) have defined a depressive syndrome as a "fairly reproducible group of signs and symptoms that regularly occur together . . . . (and have been) found to be part of a variety of depressive disorders" (p. 19). For the purpose of this study, a child was considered to have a depressive syndrome if he/she (a) obtained a score of 19 or over on the Children's Depression

Inventory; or (b) obtained scores at or above the 9th decile on both scales of the Children's Depression Scale.

Nondepressed

In order to compare depressed and nondepressed children, a nondepressed sample was required for each depressed sample. For the purpose of this study, a child was considered to be nondepressed if he/she (a) had no symptoms of depression according to information gathered by means of the parent questionnaire; (b) obtained a score of 0 on the Children's Depression Inventory; or (c) obtained scores at or below the 1st decile on both scales of the Children's Depression Scale.

Academic Achievement

For the purpose of this study, academic achievement was defined as the scores obtained on the Edmonton Public School Board system wide tests of reading decoding, reading comprehension, and math. System percentiles were used in order to facilitate comparison across grades.

Intellectual Ability

For the purpose of this study, intellectual ability was defined as the scores obtained on the Canadian Cognitive Abilities Test, a group IQ test which had been administered to all students in the Edmonton Public School System.

Self-Esteem

> Self-esteem . . . refers to the perception the individual possesses of his own worth. An individual's perception of self develops gradually and becomes more differentiated as he matures and interacts with significant others. Perception of self-worth once established, tends to be fairly stable and resistent to change. (Battle, 1981, p. 14)

For the purpose of this study, self-esteem was defined as the score obtained on the Culture-Free Self-Esteem Inventory for Children, Form A (Battle, 1981).

Locus of Control

When an individual interprets reinforcement following one of his actions as being the result of luck, chance, fate, under the control of powerful others, or as unpredictable because of the complexity of forces surrounding him, this is a belief in external control. If the individual perceives reinforcement as being the result of his own behavior or his own relatively permanent characteristics this is a belief in internal control.

For the purpose of this study, locus of control was defined as the scores obtained on the Nowicki-Strickland Locus of Control Scale for Children (Nowicki & Strickland, 1973).

CHAPTER IV

DESIGN AND PROCEDURES

The Sample

The Edmonton Public School Board was approached for permission to collect data from students enrolled in grades 4, 5, and 6 in a variety of schools throughout the city. Initially, the study was designed to collect data from students in grades 3 to 6, but the ethics committee in the Educational Psychology Department at the University of Alberta felt that results from grade 3 students would not be valid as they questioned the ability of these students to fully comprehend the questions. Therefore, grade 3 students were not included in the study.

Permission was obtained from the school board to approach the principals of 14 regular schools and 1 institutional school within the system. Of the 15 principals approached, 13 (12 regular schools and 1 institutional school) agreed to allow the researcher to collect data within their schools. Within these schools, only one teacher refused to allow data collection in his classroom.

A total of 1,117 letters outlining the nature of the study, together with copies of the parent questionnaire, were sent to the parents of the students requesting permission for their children's participation and their own cooperation in the study. (See Appendix A.) Permission slips and completed parent questionnaires were received for 660 students. Of these, 50 students were eliminated from the study due to absences during part or all of the testing, questionnaires being incomplete, and the objection of two students to completing the questionnaires. The final sample consisted of 192 grade 4 students (93 males, 99 females), 219 grade 5 students (101 males, 118 females), 195 grade 6 students (100 males, 95 females), and 4 institutional students (3 males, 1 female).

Instruments

Culture-Free Self-Esteem Inventory for Children

Form A of the Culture-Free Self-Esteem Inventory for Children (Battle, 1981) is a questionnaire of 60 items to which the individual responds by checking yes or no. The instrument contains a lie scale of 10 items, with the remaining 50 items measuring the individual's perception in 4 areas: general self, social, school, and parents. The instrument was designed so that ½ of the items indicate low self-esteem and ½ of the items indicate high self-esteem. The test can be administered either individually or in groups. Percentiles and T-scores are available for the total scale score and for each subscale score.

To establish reliability, test-retest correlations for elementary schools students ranged from .81 to .89 for the toal sample, from .72 to .93 for boys, and from .74 to .90 for girls.

Content validity was built into the scale by (a) establishing a construct definition of self-esteem, and (b) writing items intended to cover all areas of the definition. The 60 items of the scale were the most discriminating items from a pool of 150 items. Factor analysis indicated that the items in the scale possessed acceptable internal consistency.

Concurrent validity was established by significant correlations at all grade levels with the Coopersmith Self-Esteem Inventory. Values ranged from .71 to .80 for the total sample, from .72 to .84 for boys, and from .66 to .91 for girls.

Statistical analysis indicated that sex was not a significant variable affecting self-esteem. There were no significant differences between scores for students from grades 3 to 6. Correlations of self-esteem with intelligence as measured by the Canadian Lorge-Thorndike Intelligence Test were not significant.

Nowicki-Strickland Locus of Control Scale for Children

The Nowicki-Strickland Locus of Control Scale for Children (Nowicki & Strickland, 1973) is a 40 item questionnaire to which the individual responds by checking yes or no. The test was designed for oral administration to groups. Responses are scored in the direction of external locus of control.

Test-retest reliabilities tested at 3 grade levels 6 weeks apart were .63 for grade 3, .66 for grade 7, and .71 for grade 10. Internal consistency was measured by the split-half method and corrected by the Spearman-Brown formula. Values were .63 for grades 3, 4, and 5; .68 for grades 6, 7, and 8; .74 for grades 9, 10, and 11; and .81 for grade 12.

To establish construct validity the following hypotheses were made:

> (a) Scores will become more internal with increasing age; (b) scores will be related to achievement with internals achieving more than externals; and (c) scores will not be significantly related to measures of social desirability or intelligence. (p. 149)

Analysis indicated that students' responses became more internal with age. Locus of control was not significantly related to social desirability as measured by the Children's

Social Desirability Scale. The relationship between locus of control and achievement was established, particularly for males. Female achievement did not appear to be predictable from locus of control. There were no significant differences in intelligence as measured by the Otis-Lennon across groups.

Significant correlations were found with other locus of control measures, namely the Intellectual Achievement Responsibility Scale (successes--I+ but not failures--I-), the Bialer-Cromwell Locus of Control Scale, and the Rotter Locus of Control Scale.

Children's Depression Inventory (CDI)

The Children's Depression Inventory (Kovacs & Beck, 1977) is a 27-item questionnaire with each item consisting of statements graded from 0--absent to 3--severe from which the child picks the most appropriate response. Total possible scores range from 0 to 54. Kovacs (1981) has suggested that a score of 9 (s.d. of 7) is average for a normal population and for a diagnosis of depression a score of 19 is required. In the present study, one question on suicidal ideation was modified slightly to meet the concerns of the ethics committee. See pages 55 to 57 for further information on this scale.

Children's Depression Scale (CDS)

The Children's Depression Scale (Lang & Tisher, 1978) consists of 66 items, 18 of which are positive, to which the child responds with very wrong, wrong, don't know/not sure, right, or very right. Items are scored 1 to 5 with positive items scored in the reverse. These two sets of scores are retained as independent scales and scored separately, thus providing both a depressive score and a positive score. Negative items are assigned to one of six subscales --affective response, social problems, self-esteem, preoccupation with own sickness and death, guilt, miscellaneous depression--and are totalled to obtain the total depression score. Positive items are assigned to one of two subscales --pleasure and enjoyment, miscellaneous positive--and are totalled to obtain the total positive score. See pages 57 to 59 for additional information on this scale.

Parent Questionnaire

The parent questionnaire consisted of a symptom checklist into which DSM-III criteria were embedded together with a section requesting information on change situations. Parents responded by checking yes or no. The symptom checklist was scored by counting the number of symptoms checked yes for the DSM-III--A criteria, the DSM-III--B criteria, school related problems, and behavior problems. Although some of the DSM-III--B criteria were embedded into more than one question, each one was counted only once for any one subject. (See Appendix A.)

Administration of the Instruments

The parent questionnaires were sent to the parents with the letters outlining the nature of the study and were completed and returned with the permission slips prior to collecting data from the students. The questionnaires to obtain data from the students (Children's Depression Scale; Children's Depression Inventory; Culture-Free Self-Esteem Inventory for Children, Form A; and Nowicki-Strickland Locus of Control Scale for Children) were administered in classroom groups to students for whom permission to participate had been obtained. It was explained to the students that we were interested in learning how students feel about various things, this was not a test, and there were no right and wrong answers. Any questions regarding the study or about the meaning of questions were answered as they arose. Administration of the tests was conducted over one to four sessions according to what arrangements could best be accomodated by each teacher's time schedule. Questionnaires were scored according to directions outlined by the authors for each questionnaire.

Cumulative records of the students were used to obtain IQ scores (Canadian Cognitive Abilities Test) and the Edmonton Public School Board system wide math and reading scores.

Analysis of the Data

Two-way multivariate analysis of variance was used to determine if grade or sex differences existed for the test instruments. Frequency statistics were used to determine what percentage of the total sample, males, females, and each grade level met the DSM-III criteria for a depressive disorder according to the information obtained from the parent questionnaires. Similar percentages were calculated for (a) subjects who obtained scores of 19 or over on the Children's Depression Inventory, and (b) subjects who scored at or above the 9th decile on both scales of the Children's Depression Scale.

Sample sizes of depressed children were not large enough to perform analyses comparing depressed and non-depressed subjects according to age and sex groups. Therefore all analyses were performed on the total groups. Because the small sample sizes of depressed children limited the use of multivariate analysis to compare depressed and nondepressed subjects. *T*-tests were used to determine whether significant differences existed between the mean scores obtained by depressed and nondepressed children on measures of self-esteem, locus of control, academic achievement, number of change situations, and number of behavior problems. The use of multiple *T*-tests increased the probability of making Type I errors (finding significance erroneously) and thereby created a need to interpret the results with caution. Frequency counts were taken to determine the types of behavior problems experienced by depressed subjects.

Pearson Product Moment Correlations were calculated to determine the relationship of the instruments used to measure depression. *T*-tests were used to compare each set of depressed and nondepressed children on all depression scales other than the measure used to identify the group. Individual profiles were examined to determine if the three measures of depression identified the same children. A principal components factor analysis with a varimax rotation was performed using all variables to determine how many factors were measured by the data collected.

Delimitations of the Study

1. The data were collected only from students in

grades 4, 5, and 6 thus limiting the generalizability of the results to this age group.

2. It is unlikely that behavioral checklists can substitute for formal psychiatric interviews as important information not specifically inquired for may be missed. It was, however, the only feasible method of obtaining data from a large sample.

3. In order to avoid antagonizing the parents of normal children, questions regarding psychiatric illness in the family and socioeconomic status were not included in the parent questionnaire.

4. Academic achievement was based on only one test battery which may not be an accurate reflection of the students' overall work performance. Teacher input was not included.

5. The procedure for selection did not provide controls to ensure that all subjects were of a least average intelligence.

Limitations of the Study

1. A volunteer sample was used, making this study subject to the limitations of volunteer research (Rosenthal & Rosnow, 1975).

2. The tests used to measure depression are research

instruments and as such have not yet been fully validated. They are, however, the best available.

3. Intellectual ability scores were not available for all subjects, thus limiting the generalizations that could be drawn.

4. The procedure of using a large number of T-tests rather than multivariate analysis increased the probability of Type I errors.

5. Although the multivariate analysis of variance indicated significant grade and sex effects, the comparison of depressed and nondepressed subjects were performed on the total group because of the small sample sizes of the depressed subjects.

CHAPTER V

RESULTS

The results are reported following the traditional format, which includes restatement of the research questions, the pertinent statistics, and the appropriate conclusions.

Mean scores and standard deviations were calculated for all variables by grade and by sex and have been recorded in Tables A and B (Appendix B).

Results of a two-way multivariate analysis of variance on test variables have been reported in Table 1 and significant results of univariate *F*-tests have been reported in Table 2.

Although significant differences were found between the mean scores obtained by males and females on reading comprehension, the Children's Depression Inventory, and social self-esteem and among the mean scores obtained by grades 4, 5, and 6 on locus of control and the lie scale, an examination of the scores obtained indicated that these differences were not "clinically significant." The institutional sample was not included in this analysis because of missing data. However, if one standard deviation above or below the mean can be taken as significantly different,

TABLE 1

TWO-WAY MULTIVARIATE ANALYSIS OF VARIANCE

WILKS MULTIVARIATE TEST OF SIGNIFICANCE

Source of Variation	Value	Approx. F	Hyp. df	Error df	Sig. of F
Sex by Grade	.941	.952	38	1164	.554
Grade	.194	38.839	38	1164	.000
Sex	.918	2.733	19	582	.000

TABLE 2

SIGNIFICANT RESULTS

UNIVARIATE F-TESTS

	GRADE		SEX	
	F	Sig.	F	Sig.
Age	1052.32	.000	3.99	.046
Lie Scale	7.88	.000		
Locus of Control	9.43	.000		
Comprehension			5.13	.024
Social Self-Esteem			3.75	.053
CDI			3.73	.053

mean scores for this group were significantly higher on locus of control, the Children's Depression Inventory, and the miscellaneous depression subscale (CDS), and significantly lower on the lie scale. Canadian Cognitive Abilities Test scores were not available for direct comparison of ability, but an examination of WISC-R scores indicated that the mean intelligence scores of this group were significantly lower than the mean scores obtained for the total sample.

Incidence

The first two research questions involved the prevalence of childhood depression.

Question 1--What is the incidence of depression in a sample drawn from a normal population of children?

Question 2--What is the distribution of depressed children in a sample drawn from a normal population of children in terms of age and sex?

Percentages were calculated by grade and sex using the criteria for a depressive disorder and both criteria for a depressive syndrome. Results are reported in Table 3.

According to information provided by parents, just over 2% of the children at each grade level had a depressive disorder. It was interesting to note that slightly

TABLE 3

INCIDENCE OF DEPRESSION

	DSM-III A + B		CDI		CDS		DSM-III B ONLY	
	N	%	N	%	N	%	N	%
Grade 4								
Males (n=93)	2	2.15	10	10.75	6	6.45	5	5.38
Females (n=99)	2	2.02	14	14.14	4	4.04	5	5.05
Total (n=192)	4	2.08	24	12.50	10	5.21	10	5.21
Grade 5								
Males (n=101)	3	2.97	6	5.94	4	3.96	2	1.98
Females (n=118)	2	1.69	10	8.47	5	4.24	2	1.69
Total (n=219)	5	2.28	16	7.31	9	4.11	4	1.83
Grade 6								
Males (n=100)	2	2.00	5	5.00	0	0.00	2	2.00
Females (n=95)	2	2.11	9	9.47	6	6.32	1	1.05
Total (n=195)	4	2.05	14	7.18	6	3.08	3	1.54
Institutional								
Males (n=3)	0	0.00	1	33.33	0	0.00	1	33.33
Females (n=1)	0	0.00	1	100.00	0	0.00	0	0.00
Total (n=4)	0	0.00	2	50.00	0	0.00	1	25.00
Totals								
Males (n=297)	7	2.36	22	7.41	10	3.37	10	3.37
Females (n=313)	6	1.92	34	10.86	15	4.79	8	2.56
Total (n=610)	13	2.13	56	9.18	25	4.10	18	2.95

more males than females were identified with this difference being most noticeable at the grade 5 level.

The incidence of a depressive syndrome varied with the measure used. The Children's Depression Scale, which included a measure of positive feelings as well as the presence of depressive symptoms, identified 4.10% of the children compared with 9.18% identified by the Children's Depression Inventory. Both measurements identified a greater percentage of females than males at all grade levels except grade 4, where more males than females were identified by the CDS. It was noted that the percentage of children with depressive syndromes decreased with each increase in grade level.

For comparison purposes, the percentages of children who, according to the parent questionnaire, met the DSM-III criteria except for persistent sadness were calculated and included in Table 1. An additional 2.95% of the children were identified in this manner. It was noted that similar to the results of the depression scales, but unlike the results using the full DSM-III criteria, the percentage of children identified decreased with each increase in grade level. Again, slightly more males than females were identified by parents.

Conclusions. In this study, 2.13% of the children were identified as having depressive disorders from information provided by parents. Only minor differences were found in the distribution among the grade levels and the sexes. Up to 9.18% of the children experienced severe depressive symptomotology, with the male-female ratio being 1:2. It would appear, however, that many of these children were still able to experience pleasure. The percentage of children identified as having depressive syndromes decreased with each increase in grade.

Characteristics of Depressed Children

Although the multivariate analysis of variance indicated significant grade and sex effects, the comparison of depressed and nondepressed subjects were performed on the total group because of the small sample sizes of the depressed subjects.

Question 3--Is there a significant difference between the scores obtained by depressed and nondepressed children on self-esteem as measured by the Culture-Free Self-Esteem Inventories for Children, Form A?

Means and standard deviations for each group of depressed and nondepressed subjects were calculated for the total and subscale scores of the Culture-Free Self-Esteem

Inventories for Children. T-tests were used to determine whether there were significant differences between the mean scores obtained by depressed and nondepressed subjects. Results are reported in Table 4.

The obtained values were statistically significant ($p < .05$) on all measures of the self-esteem inventory except for the lie scale. On all subscales, the mean scores obtained by the depressed sample were lower than the mean scores obtained by the nondepressed sample. There were no significant differences between the mean scores obtained by depressed and nondepressed children on the lie scale.

Conclusion. In this study, both depressed and nondepressed subjects appeared to answer the questions on the lie scale in much the same way. The depressed subjects obtained self-esteem scores that were significantly lower than those obtained by nondepressed subjects, regardless of the measure used to identify depression.

Question 4--Is there a significant difference between the scores obtained by depressed and nondepressed children on locus of control as measured by the Nowicki-Strickland Locus of Control Scale for Children?

Means and standard deviations were calculated for each group of depressed and nondepressed children on the Nowicki-

TABLE 4
T-TESTS
DEPRESSED VS NONDEPRESSED SUBJECTS
CULTURE-FREE SELF-ESTEEM INVENTORY FOR CHILDREN

	Depressed		Nondepressed				
	x	sd	x	sd	df	t	p
Parent Quest.	(n=13)		(n=343)				
Total SE	31.39	10.74	41.23	7.15	354	3.28	.01
General SE	13.39	4.25	16.63	3.31	354	2.72	.01
Social SE	5.23	3.00	7.36	2.03	354	2.54	.02
Academic SE	5.54	2.73	8.50	1.78	354	3.88	.001
Parental SE	7.23	2.62	8.74	1.64	354	2.06	.05
Lie Scale	7.23	1.69	7.51	1.88	354	.58	n.s.
CDI	(n=56)		(n=66)				
Total SE	25.55	7.60	46.61	2.69	120	19.68	.001
General SE	9.91	3.36	19.11	1.17	120	19.57	.001
Social SE	4.27	2.36	8.46	1.24	120	11.97	.001
Academic SE	5.80	2.61	9.42	.95	120	10.06	.001
Parental SE	5.57	2.74	9.62	.80	120	10.95	.001
Lie Scale	7.02	2.11	7.00	2.00	120	.05	n.s.
CDS	(n=25)		(n=25)				
Total SE	23.20	7.97	47.12	2.65	48	14.24	.001
General SE	8.40	3.25	19.12	1.42	48	15.10	.001
Social SE	3.96	2.19	8.36	1.38	48	8.49	.001
Academic SE	5.52	2.55	9.68	.63	48	7.92	.001
Parental SE	5.32	2.87	9.96	.20	48	8.07	.001
Lie Scale	7.48	1.90	7.48	1.64	48	0.00	n.s.

Strickland Locus of Control Scale for Children. T-tests were used to determine if there were significant differences between the mean scores obtained by depressed and nondepressed children. Results are reported in Table 5.

The values obtained were statistically significant at the .001 level for all groups. Scores obtained by depressed children were higher, indicating a more external locus of control.

Conclusion--In this study, locus of control scores obtained by depressed children were significantly higher than those obtained by nondepressed children, indicating a more external locus of control for the depressed children. These differences were consistent for all three groups of depressed children.

Question 5--Is there a significant difference between depressed and nondepressed children on measures of academic achievement?

Means and standard deviations were calculated for each group of depressed and nondepressed children on measures of verbal intelligence, quantitative intelligence, nonverbal intelligence, decoding, comprehension, and math. T-tests were used to determine if there were significant differences in the mean scores obtained by depressed and nondepressed

TABLE 5

T-TESTS

DEPRESSED VS NONDEPRESSED SUBJECTS

NORWICKI-STRICKLAND LOCUS OF CONTROL SCALE FOR CHILDREN

	DEPRESSED		NONDEPRESSED				
	x	sd	x	sd	df	t	p
	(n=13)		(n=343)				
Parent Questionnaire	19.92	4.86	13.49	4.77	354	4.69	.001
	(n=56)		(n=66)				
Childrens Depression Inventory	20.23	4.10	10.33	4.10	120	13.38	.001
	(n=25)		(n=25)				
Childrens Depression Scale	21.04	4.65	9.28	3.75	48	9.84	.001

children. Results are reported in Table 6.

Children identified as having depressive disorders scored significantly lower than nondepressed children on decoding and on math ($p < .05$). These differences did not appear to be accounted for by intelligence as there were no significant differences on the IQ scores obtained by the two groups. Although significant differences were found between the scores obtained by children with depressive syndromes and nondepressed children on all academic measures ($p < .02$), these results were less clear because significant differences were also found on the mean verbal intelligence scores for both groups ($p < .05$). Quantitative intelligence scores were also significantly lower for children identified depressed by the CDI ($p < .01$).

Conclusions. In this study, children with depressive disorders scored significantly lower than nondepressed children on decoding and math despite intelligence scores that were not significantly different. Children with depressive syndromes scored significantly lower on all academic measures, which may or may not be accounted for by significant differences in intelligence.

Question 6--Is there a significant difference between depressed and nondepressed children on the number of change

TABLE 6

T-TESTS

DEPRESSED VS NONDEPRESSED SUBJECTS

INTELLIGENCE SCORES AND ACADEMIC ACHIEVEMENT

	DEPRESSED		NONDEPRESSED				
	x	sd	x	sd	df[a]	t	p
Parent Quest.	(n=13)		(n=343)				
Verbal IQ	113.00	13.00	115.24	12.53	313	.54	n.s.
Quant. IQ.	104.00	15.58	109.25	13.47	313	1.04	n.s.
Nonverbal IQ	109.60	16.93	110.57	13.37	312	.17	n.s.
Decoding	48.77	27.20	64.06	25.45	354	1.99	.05
Comprehension	56.54	24.85	65.49	25.41	354	1.27	n.s.
Math	41.31	27.44	66.09	24.94	354	3.21	.01
CDI	(n=56)		(n=66)				
Verbal IQ	105.93	16.22	115.39	12.55	97	3.16	.01
Quant. IQ	102.43	15.41	110.50	13.23	96	2.73	.01
Nonverbal IQ	106.45	16.26	111.71	15.38	96	1.62	n.s.
Decoding	46.19	29.42	66.94	23.31	118	4.21	.001
Comprehension	48.69	28.92	69.47	23.80	118	4.23	.001
Math	43.33	28.65	71.35	22.41	118	5.86	.001
CDS	(n=25)		(n=25)				
Verbal IQ	111.09	16.28	119.64	10.22	43	2.12	.05
Quant. IQ	104.13	18.06	112.73	11.85	43	1.90	n.s.
Nonverbal IQ	109.39	18.47	112.23	15.37	43	.56	n.s.
Decoding	54.16	28.61	73.68	23.52	48	2.63	.02
Comprehension	52.44	29.31	71.76	22.62	48	2.61	.02
Math	48.76	30.94	70.52	25.90	48	2.70	.01

[a] df varies as IQ measures were not available for all subjects.

situations experienced?

Means and standard deviations for each group of depressed and nondepressed subjects were calculated for the number of moves, number of schools attended, number of marital changes in the family, number of deaths, number of children not living with both natural parents, number of children chronically ill, and number of children with other family members who were chronically ill. Results are reported in Table 7.

Children identified as depressed from parent information experienced more marital changes in their families than nondepressed children; however, this difference was not found when comparing children identified as depressed from self-report measures with nondepressed children. On the other hand, children identified as having depressive syndromes experienced significantly more moves, a greater number of schools, and more deaths than nondepressed children. Of the three samples of depressed children, only those identified by the CDI had significantly more children who were not living with both natural parents as well as more children who were chronically ill than found in the nondepressed samples.

Conclusions. In this study, children identified as

TABLE 7

T-TESTS

DEPRESSED VS NONDEPRESSED SUBJECTS

NUMBER OF CHANGE SITUATIONS EXPERIENCED

	DEPRESSED		NONDEPRESSED				
	x	sd	x	sd	df	t	p
Parent Quest.	(n=13)		(n=343)				
# Moves	.846	.801	.595	.668	354	1.11	n.s.
# Schools	2.538	1.713	2.050	1.289	354	1.02	n.s.
# Marital Ch.	.538	.519	.105	.316	354	2.99	.01
# Deaths	.308	.630	.248	.592	354	.34	n.s.
# Missing par.	.462	.519	.178	.383	354	1.95	n.s.
Chr. Ill. Child	.077	.277	.061	.240	354	.21	n.s.
Chr. Ill. Other	.077	.277	.079	.310	354	.03	n.s.
CDI	(n=56)		(n=66)				
# Moves	1.143	.841	.545	.661	120	4.30	.001
# Schools	2.929	1.925	1.909	1.133	120	3.48	.001
# Marital Ch.	.286	.494	.136	.388	120	1.83	n.s.
# Deaths	.429	.657	.197	.503	120	2.17	.05
# Missing par.	.375	.489	.182	.389	120	2.38	.02
Chr. Ill. Child	.125	.334	.015	.123	120	2.34	.05
Chr. Ill. Other	.161	.496	.061	.240	120	1.44	n.s.
CDS	(n=25)		(n=25)				
# Moves	1.080	.759	.400	.645	48	3.42	.01
# Schools	2.840	1.864	1.880	1.054	48	2.24	.05
# Marital Ch.	.200	.408	.160	.473	48	.30	n.s.
# Deaths	.480	.510	.080	.277	48	3.44	.01
# Missing par.	.280	.458	.120	.332	48	1.42	n.s.
Chr. Ill. Child	.040	.200	.040	.200	48	0.00	n.s.
Chr. Ill. Other	.080	.277	.040	.200	48	.58	n.s.

depressed from parent information experienced significantly more changes due to marital change than nondepressed children; whereas, children identified as depressed through self-report measures experienced significantly more moves, school settings, and deaths than did nondepressed children. The sample of depressed children identified by the CDI also included more children who were not living with both parents or who were chronically ill.

Question 7--Is there a significant difference between depressed and nondepressed children on the number and type of behavior problems?

Means and standard deviations for each group of depressed and nondepressed subjects were calculated for the number of school related problems and the number of behavior problems reported by the parents. T-tests were used to determine whether there were significant differences between the mean scores of depressed and nondepressed subjects. Results are reported in Table 8.

Frequencies were calculated for behavioral concerns other than depressive symptomatology for each of the depressed samples and for the total of all completed questionnaires. Results are reported in Table 9.

All samples of depressed children had significantly

TABLE 8

T-TESTS

DEPRESSED VS NONDEPRESSED SUBJECTS

NUMBER OF SCHOOL AND BEHAVIOR PROBLEMS

	DEPRESSED		NONDEPRESSED				
	x	sd	x	sd	df	t	p
Parent Quest.	(n=13)		(n=343)				
# School Prob.	.692	1.032	.079	.280	354	2.14	.05
# Behavior Prob.	4.077	1.320	.487	.939	354	9.71	.001
CDI	(n=56)		(n=66)				
# School Prob.	.411	.708	.091	.290	120	3.17	.01
# Behavior Prob.	2.339	1.966	.621	1.174	120	5.73	.001
CDS	(n=25)		(n-25)				
# School Prob.	.320	.557	.080	.277	48	1.93	n.s.
# Behavior Prob.	2.400	1.826	.320	.900	48	5.11	.001

TABLE 9

FREQUENCIES OF BEHAVIOR PROBLEMS FOR THREE DEPRESSED SAMPLES AND TOTAL SAMPLE

	Parent Quest. (N=13)		CDS (N=25)		CDI (N=56)		Total Sample (N=660)	
	N	%	N	%	N	%	N	%
Poor School Achievement	4	30.77	5	20.00	14	25.00	47	7.12
School Phobia	1	7.69	0	0.00	2	3.57	11	1.67
Psychosomatic Headaches	3	23.08	4	16.00	7	12.50	47	7.12
Psychosomatic Stomache aches	1	7.69	7	28.00	11	19.64	58	7.79
Bedwetting	0	0.00	1	4.00	5	8.93	16	2.42
Irritability	12	92.31	12	48.00	26	46.43	157	23.79
Fight/anti-social beh.	7	58.85	3	12.00	12	21.43	63	9.55
Boredom/restless	11	84.62	12	48.00	23	41.07	172	26.06
Defiant	8	61.54	7	28.00	15	26.79	74	11.21
Temper Tantrums	6	46.15	4	16.00	12	21.43	60	9.09
Difficulty Making Friends	8	61.54	6	24.00	17	30.36	68	10.30

more behavior problems than nondepressed children ($p < .001$). Children identified as depressed according to parents or the CDI also had significantly more school related problems ($p < .05$).

All types of behavior problems were found more frequently in the depressed samples than in nondepressed samples. Incidence of irritability, boredom or restlessness, and defiance, symptoms frequently associated with depression in the literature, was extremely high in depressed samples but was also too high in the total population for these behaviors to be considered "deviant." School phobia and bedwetting were concerns that were checked only infrequently for both depressed and nondepressed children.

Conclusions. In this study, depressed children had significantly more behavior problems than nondepressed children, and, in two of the three samples, had significantly more school related problems than nondepressed children. It would appear that the type of behavior problems are much the same in both depressed and nondepressed children, but that the frequency of occurrence is greater in the depressed samples.

Question 8--How do the tests used to measure depression relate to each other?

For each set of depressed and nondepressed children means and standard deviations were calculated on all depression scales other than the measure used to identify the group. T-tests were used to determine if there were significant differences between the mean scores obtained by depressed and nondepressed subjects. Results are reported in Tables 10, 11, and 12.

For the children identified by the parent questionnaire, the mean scores obtained by the depressed group were significantly higher than the mean scores obtained by the nondepressed group on all measures except guilt. However, an examination of the means obtained indicated that the scores of the depressed group were below the cut-off scores used to identify depression. Only on the subscale measuring pleasure and enjoyment was the score higher than one standard deviation above the mean.

For the children identified by self-report measures, only those identified by the CDI obtained significantly higher DSM-III--B scores on the parent questionnaire. DSM-III--A scores were not significantly different for either group.

For both groups all scores obtained by the depressed children were significantly higher than those obtained by

TABLE 10

T-TESTS

DEPRESSED VS NONDEPRESSED ACCORDING TO PARENT QUESTIONNAIRE ON OTHER DEPRESSION MEASURES

	DEPRESSED (n=13)		NONDEPRESSED (n=343)			
	x	sd	x	sd	t	p
CDI	12.77	8.81	5.71	5.80	2.87	.01
Affective Response	25.00	6.63	17.50	5.75	4.02	.001
Social Problems	23.31	7.43	18.71	6.42	2.20	.05
Self-Esteem	23.00	6.30	18.13	6.27	2.74	.01
Sickness & Death	21.46	6.64	16.92	5.28	2.44	.02
Guilt	21.08	5.65	18.60	5.85	1.55	n.s.
Miscellaneous Depression	29.69	6.06	23.86	6.17	3.40	.001
Total Depression	143.54	30.79	113.71	30.72	3.43	.001
Pleasure & Enjoyment	22.54	6.49	16.41	4.77	3.37	.001
Miscellaneous Positive	25.62	7.91	21.08	4.88	2.05	.05
Total Positive	48.15	12.71	37.49	8.52	2.30	.05

Note. *df* = 354

TABLE 11

T-TESTS

DEPRESSED VS NONDEPRESSED ACCORDING TO CHILDRENS
DEPRESSION INVENTORY ON OTHER DEPRESSION MEASURES

	DEPRESSED (n=56)		NONDEPRESSED (n=66)			
	x	sd	x	sd	*t*	*p*
DSM-III--A	.089	.288	.015	.123	1.85	n.s.
DSM-III--B	1.786	1.755	.439	.787	5.39	.001
Affective Res.	28.18	5.76	12.74	3.22	17.75	.001
Social Problems	29.39	5.69	12.89	3.24	19.23	.001
Self-Esteem	28.30	5.81	12.50	3.37	17.95	.001
Sickness & Death	25.63	4.80	12.36	3.54	14.44	.001
Guilt	25.98	5.29	14.44	4.19	13.64	.001
Miscellaneous Depression	33.36	4.78	18.09	3.96	18.99	.001
Total Depression	170.84	24.42	83.03	17.09	22.63	.001
Pleasure & Enjoyment	24.11	4.53	12.89	3.28	15.43	.001
Miscellaneous Positive	27.71	5.44	18.28	3.98	10.76	.001
Total Positive	51.82	8.75	31.12	6.37	14.70	.001

Note. *df* = 120

TABLE 12

T-TESTS

DEPRESSED VS NONDEPRESSED ACCORDING TO CHILDRENS DEPRESSION SCALE ON OTHER DEPRESSION MEASURES

	DEPRESSED (n=25)		NONDEPRESSED (n=25)			
	x	sd	x	sd	t	p
DSM-III--A	.160	.374	.040	.200	1.41	n.s.
DSM-III--B	1.600	1.291	.560	1.003	1.01	n.s.
CDI	22.24	7.13	.640	.907	15.03	.001

Note. df = 48

the nondepressed group ($p < .001$). Mean scores obtained by each depressed group also qualified as depressed by the other criteria for depression.

An examination of individual profiles suggested that the CDI and the CDS identified the same children, but that the CDS was more discriminating because of the need to meet the criteria on both scales (presence of depressive symptoms and absence of positive feelings). Of the 56 subjects identified by the CDI, 18 met both criteria, 17 met the depressive criteria, and 11 met the absence of pleasure criteria. Eight of the remaining 10 had scores just below the cut-off scores for one or both of the scales.

Of the 25 subjects identified by the CDS, 18 met the criteria on the CDI, 4 obtained scores between 14 and 18 (+1 s.d.), and the remaining three had scores between 10 and 14.

Of the 13 subjects identified by the parent questionnaire, 1 met the criteria on both the CDI and the CDS, 1 each on the CDI and CDS but not both, and 3 on one of the scales of the CDS. The remaining 7 subjects did not meet the criteria for a depressive syndrome on any of the self-report measures.

Pearson Product Moment correlation coefficents were calculated to determine the relationship of the depression measures. Results are reported in Table 13.

All values were significant at the .001 level. It was noted, however, that correlations between the parent questionnaire and other depression measures were low. Therefore, the percentage of variance of the other depression measures that could be predicted by the variance on the parent questionnaire would be minimal.

Conclusions. It would appear that the Children's Depression Inventory and the Children's Depression Scale were basically measuring the same entity and identifying the same children. The Children's Depression Scale was less inclusive, which appeared to be the result of the dual criteria (presence of depressive symptoms and absence of positive feelings). The relationship between the depressive symptoms on the parent questionnaire and the self-report measures of depression appeared to be minimal.

Factor Analysis

A principal components factor analysis with a varimax rotation was performed using all variables to determine how many factors were measured by the data collected.

Eight factors, accounting for 66.68% of the total variance emerged. All factor loadings above .300 are

TABLE 13

PEARSON PRODUCT MOMENT CORRELATION COEFFICIENTS

DEPRESSION MEASURES

	Parent Quest.	Total Depression	Total Positive	CDI
Parent Quest.	1.0000 *	.2840 *	.2329 *	.3268 *
Total Depression Scale	.2840 *	1.0000 *	.6100 *	.7220 *
Total Positive Scale	.2329 *	.6100 *	1.0000 *	.6437 *
CDI	.3268 *	.7220 *	.6437 *	1.0000 *

* $\underline{p} < .001$

reported in Table 14.

Factor I--Depression

It can be seen that factor I was defined primarily by the scales measuring depressive symptoms. The loading of locus of control and negative general self-esteem on this factor supported the relationship of these variables to depression. It was interesting to note that the positive subscales of the CDS loaded only minimally on this factor.

Factor II--Bipolar Self-Esteem and Depression

The positive subscales on the CDS had higher loadings with the negative self-esteem subscales than with the depressive symptoms in factor I. Although the majority of the depression subscales were loaded with negative self-esteem, this factor was missing the guilt and miscellaneous depressive symptoms which have frequently been considered as important components of depression.

Factor III--Academic

This factor was defined primarily by the measures of academic achievement. It was not surprising that the number of school related problems loaded negatively with achievement. The loading of the lie scale on this factor suggested the possibility that this scale may have been more difficult to comprehend than other test measures.

TABLE 14

FACTOR LOADINGS

	I	II	III	IV	V	VI	VII	VIII	h^2
Ill-Child							791		648
Ill-Other							756		609
Age								849	759
Decoding			875						802
Comprehension			886						824
Math			796						690
General SE	-492	-670							765
Social SE		-654							624
Academic SE		-601							552
Parental SE	-303	-689							596
Lie Scale			547					342	493
Loc. Control	408	454	-391						612
CDI	476	654							697
Aff. Res.	771	395							775
Soc. Prob.	781	416							797
Self-Esteem	798	398							814
Sick & Death	749	334							695
Guilt	820								704
Misc. Dep.	825								788
Pl. & Enj.	394	685							648
Misc. Pos.		701							572
DSM-III--A				777					631
DSM-III--B				769					689
Beh. Prob.				710					622
Sch. Prob.			-376	322				438	522
# Moves						761			646
# Schools						758			680
# Marital Ch.					777				691
# Deaths							345		358
Missing Par.					802				690
% Tot. Var.	16.7	13.9	10.1	6.8	5.1	5.1	4.7	4.2	66.7

Factor IV--Parental Concerns

This factor was defined by the concerns checked by parents on the parent questionnaire. It was interesting to note that all parental concerns loaded together regardless of the type of concern, and that the depressive symptoms of this questionnaire did not load at all with the self-report measures of depression.

Factor V--Loss

The number of children who were not living with both natural parents combined with the number of marital changes in the family to define a loss factor.

Factor VI--Change

The number of moves and the number of different schools attended by the child were combined to define a change factor.

Factor VII--Illness

This factor was defined by items relating to illness or death in the family.

Factor VIII--Age

Factor VIII appeared to be a factor related to age.

Summary

In this study, the incidence of depression ranged from 2.13% to 9.18% depending on the measure used to identify depression. According to parent checklist information, the percentage of depressed children was fairly evenly distributed among the grades and sexes. The male-female ratio of children identified as depressed from self-report measures was 1:2 and the percentage decreased with each increase in grade.

Depressed children had significantly lower self-esteem scores and significantly higher locus of control scores, indicating negative self-esteem and external locus of control. Although depressed children had significantly lower academic scores, it was not clear whether this difference was related to depression or to ability. Depressed children were identified as having more behavior problems and as having experienced more change situations but the type of change associated with depression varied with the measure of depression.

The Children's Depression Scale appeared to be measuring the same entity as the Children's Depression Inventory but was less inclusive, possibly due to the dual criteria of depressive symptoms being present and positive feelings being absent. It appeared that the depressive criteria on the parent questionnaire was only minimally related to the two self-report measures of depression.

Eight factors accounting for 66.68% of the variance emerged through factor analysis. These factors were identified as a depression factor, a bipolar self-esteem and depression factor, an academic factor, a parental concerns factor, a loss factor, a change factor, an illness factor, and an age factor.

CHAPTER VI

DISCUSSION

In this exploratory study, the author started from the assumption that depression exists in childhood, and undertook to determine the incidence and distribution of childhood depression, and to describe the characteristics of depressed children.

Incidence

The incidence of depression found in this study varied according to the measure used to identify depression and ranged from 2.13% to 9.18%. As found by Carlson and Cantwell (1980a), prevalence decreased as criteria became more rigid. The 2% identified from parent information was consistent with the results of Kashani and Simmonds (1979) who found 1.9% of the children in a general population to be depressed. However, they also found that an additional 17.4% of their sample indicated sadness as a distinct affect and suggested this group may have had a subclinical form of depression or may have been showing the early manifestations of depression. It should be noted, as well, that the child has been found to be the best reporter of his/her present state (Carlson & Cantwell, 1980b; Cytryn, McKnew, & Bunney, 1980; Puig-Antich & Gittelman, 1982) and that information obtained from children's interviews have been more predictive of later psychopathology than ratings by teachers and parents (Puig-Antich & Gittelman, 1982).

Of the two self-report measures used, only the Children's Depression Inventory has been validated as dintinguishing between normal children and children who have been diagnosed depressed by psychiatric ratings (Blackman, 1983; Kovacs, 1981), and as distinguishing between depressed and nondepressed clinic children (Blackman, 1983). These validation studies were carried out with clinical populations and therefore additional factors may have existed which may not have been present for those identified by the CDI in the general population.

An examination of the individual profiles suggested that the CDI and the CDS identified the same children and were therefore measuring the same entity, but that the CDS was less inclusive than the CDI. It appeared that this was due to the dual criteria of the CDS which required both the presence of depressive symptoms and the absence of positive feelings. Another possibility exists that the cut-off scores on the CDS which were arbitrarily set by the researcher to include only the most severe symptoms, were too low to include all children that should have been identified.

The distribution of depressed children identified by parent information was fairly evenly distributed among the grades and sexes, but when children were identified by self-report measures, females outnumbered males 2 to 1 and the percentage of children decreased with each increase in grade. The higher proportion of females than males was not surprising as "in the adult population approximately 18% to 23% of the females and 8% to 11% of the males have at some time had a major depressive episode" (American Psychiatric Association, 1980). The higher percentage at the lower grade contradicted Blackman's (1983) findings that in her sample of normal children, grade 6 students reported more depressive symptoms than other grades. Blackman's sample was small by comparison and may have been less representative of the general population. On the other hand, even though children in the present study were assured of confidentiality, names were required in order to match all the information for each child, and it could be that with increasing age, children tended to become more private about their inner lives. It was also possible that some symptoms may be part of a normal stage of development and may dissipate with age as suggested by Lefkowitz and Burton (1978).

It is suggested that at least 2% and up to 9% of the children in a normal population suffer from a depressive syndrome, probably more females than males are affected, and some, but not all, of the symptoms may dissipate with time. Clearly, more work is required in this area before firm conclusions can be drawn.

Characteristics of Depressed Children

Self-Esteem

Depressed children were found to have significantly lower self-esteem scores than nondepressed children. This difference was consistently found regardless of the measure used to determine depression. From the factor loadings of general self-esteem and parental self-esteem with the items measuring depressive symptoms, it was suggested that the children's feelings about themselves and their perceptions of how their parents view them play important roles in their depressive feelings.

The relationship of negative self-esteem to depression was consistent with findings of past research (i.e. Lefkowitz & Tesiny, 1980; Moyal, 1977) and supported the theoretical models that postulate loss of self-esteem as a possible cause of depression (i.e. Bibring, 1953; Beck, 1967).

Locus of Control

Depressed children were found to be more external in their locus of control than nondepressed children, with this finding being consistent regardless of the measure used to identify depression. These findings were consistent with past research (Lefkowitz & Tesiny, 1980; Moyal, 1977; Tesiny, Lefkowitz, & Gordon, 1980) and provided some support to the learned helplessness model of depression (Seligman, 1975).

Academic Achievement

Children identified as depressed from parent information scored significantly lower on decoding and math tests, and children identified by self-report measures scored significantly lower on all academic measures than nondepressed children. It was noted, however, that children identified by self-report measures had significantly lower verbal IQ scores as well. It was possible that depression interfered with academic achievement as suggested by Brumback, Jackoway, and Weinberg (1980) and Colbert, Newman, Ney, and Young (1982), but equally possible that the differences in academic achievement could be a result of differences in ability. Interpretation of these results was further confused by the fact that ability scores were taken from group administered tests done within the system, and could be as prone to interference by depressive syndromes as academic tests. Because ability scores were not available for all students, and academic scores were taken from only one sampling of the students' work, any conclusions drawn would at best be tentative even if results were more definite. It is clear that much more research is needed in this area before any valid conclusions can be drawn.

Change Situations

Depressed children experienced significantly more change situations than nondepressed children, but the type of change varied depending on the measure of depression. Families of children identified by parent information had undergone significantly more marital changes than nondepressed children; however, this finding was not consistent with results of children identified through self-report measures. Although loss of a parent through death or divorce has been associated with childhood depression (Cytryn & McKnew, 1973; Philips, 1973; Poznanski & Zrull, 1970), it was also possible that the parents in this study who experienced marital changes were more likely to be concerned about the effect of these changes on their children and more likely to identify or be aware of the negative feelings of their children.

On the other hand, children identified through self-report measures had experienced more moves, attended more schools, and experienced more deaths in their families than nondepressed children. This was consistent with the research of Cytryn and McKnew (1972) who found that children with chronic depression had a history of many separations and object losses. Only the CDI identified significantly more children who were not living with both natural parents or who were suffering from chronic illness. Chronic illness of other family members did not appear to be related to depression. A number of researchers (i.e. Brumback, 1979; McKnew & Cytryn, 1973; Poznanski & Zrull, 1970) found a positive history of affective disorders in the families of depressed children. Although depression was listed on a couple of questionnaires under the questions on chronic illness, it is unlikely that this dimension was effectively tapped in the present study.

Behavior

Depressed children had significantly more behavior problems than nondepressed children regardless of the measure used to identify depression. Children identified as depressed from parent information or by the CDI also experienced more school related problems (i.e. poor academic achievement). Although parents had the option of listing additional concerns to the questionnaire, very few parents did so. It can only be concluded that depressed children have much the same types of behavior problems as nondepressed children, but these problems occur with greater frequency in depressed children. It should also be noted that the measure of behavior problems was taken totally from parent information and, therefore, it was a plausible alternative that depressed children had parents who paid more attention to behavior problems and as a result received less positive reinforcement from their environments. This alternative, if accepted, would provide support to the behavior reinforcement model of depression.

Implications for Future Research

1. Research is needed to validate the Children's Depression Scale with independent ratings of depression and to establish reasonable cut-off scores.

2. Research is needed to determine whether children from a normal population who are identified as depressed by the Children's Depression Inventory or by the Children's Depression Scale would be diagnosed as depressed by independent psychiatric ratings.

3. Longitudinal studies are needed to determine if depressive syndromes found in a normal population persist

over time.

4. Depression questionnaires should be analyzed to determine if individual items are common or typical at any of the grade levels.

5. A more intensive study is needed to determine the relationship of depression to academic achievement. Such a study should include teacher input which may reflect more subtle differences than could be found in system wide tests, and measures of ability that are less prone to interference by depressive syndromes (i.e. individual tests).

6. Research is needed to determine if parental ratings of children as behavior problems are confirmed by outside ratings of children as behavior problems, and the relationship of these perceptions to depression.

7. Research is needed to determine the relationship between depression in childhood and socioeconomic status.

8. The present study was concerned only with children in late childhood. Similar studies should be conducted to determine if differences exist for depression in children at other stages of developmement.

9. No data are currently available regarding subtypes of childhood depression. Further research is needed

to develop procedures to identify and/or classify subtypes of depression in childhood.

10. The development of affect needs to be studied in the well-adjusted child as well as the disturbed child in order to determine the relationship of depressive symptoms to normal development.

11. Interviewing both the children and the parents of the children who have been identified as depressed would provide more insight into the relationship of family background, change variables, and behavioral problems to depression.

12. Phase II of the present study should include a discriminant function analysis to determine how well factors I to IV of the factor analysis predict depression.

13. Because the statistical procedures used in this study increased the probability of Type I errors, results of this study should be validated by future research.

14. The parent questionnaire used in this study may be of limited usefulness. The use of a forced choice format may need to be reconsidered, and it is suggested that a severity measure be obtained for each symptom in future research.

15. Future research is needed to determine if

differences exist among the grades and/or between the sexes in the characteristics of depression.

Educational Implications

It would appear that the depressed child is one who has negative feelings about his/her own self-worth and who feels he/she has little or no control over the reinforcements in the environment. The depression may be reflected in poor school achievement and/or in increased behavioral problems. The depressed child may be withdrawn and frequently has difficulties in making friends.

Reprimands or exhortations to do better may not only be ineffective in working with the depressed child, but may also increase the underlying depression as the child may interpret them as further evidence of his/her lack of self-worth. It therefore becomes important that school personnel be able to identify depression in children rather than assuming conduct problems or lack of interest or unwillingness of the child to do school work. Although the Children's Depression Inventory (Kovacs & Beck, 1977) may be overinclusive in the number of children it identifies as depressed, it would provide a very quick screening instrument that could be used to determine which children should be referred for further in-depth assessment.

Prevention is always preferable to treatment, and the profile of the depressed child has implications for educational programming. Programs aimed at developing the children's positive self-esteem should be an integral part of all school programs. Many programs (i.e. Magic Circle, DUSO) are available that can be used in this regard, but it is also important that, throughout the school day, the child be treated as an individual with importance and worth. Activities designed to help in developing social skills (i.e. teaching communication skills) may also be useful in helping children relate to each other.

In addition, there is a need for children to feel they have some control over their environment. Many opportunities exist throughout the normal school day where childderen could be given choices or the opportunity to make decisions. Cause-effect relationships and consequences of each decision should be explored.

There was some evidence to suggest the possibility that children who have experienced more moves and/or have been in a number of school settings may be particularly prone to developing depression. This has significance for schools in areas where a large portion of the population is transient. In these areas, the need to be aware of opportunities to help children develop a positive self-esteem and a sense of control over at least some portion of their environment becomes even more crucial.

Clinical Implications

The identification and diagnosis of depression in childhood remains extremely complex. It is the opinion of the present writer that the diagnosis of depression in children should not be made without the presence of symptoms of the depressive syndrome; the concept of masked depression may merit future testing, but at present is too all inclusive to be useful. The clinician is directed to become familiar with the DSM-III multiaxial system of diagnosis and, in particular, to be sensitive to levels IV and V of the diagnostic system. These two levels focus on severity of the disorder and prognosis.

Although the Children's Depression Scale (Lang & Tisher, 1978) should be used cautiously until norms, validity, and cut-off scores are firmly established, it provides a severity measure of the child's depressive symptoms in each of the subscale areas. In this respect, it would be a useful tool for the clinician to use to determine the child's strengths and weaknesses and aid in establishing a treatment focus. It is recommended that the individual version of the scale be used in the clinical setting.

Interviews with both the child and the parents are needed to provide the clinician with an understanding of the family dynamics. The present writer does not feel that this information can be adequately tapped with a simple questionnaire. It is important that information of the severity of the symptoms be elicited when interviewing the child and the parents.

Although the biochemical and genetic factors of depression are outside the scope of this study, the present writer recognizes that chemical intervention may be necessary in the treatment of some children who are depressed. This study does, however, provide some implications for the treatment process. It is important that the clinician work with both the family and the school in assisting the child to develop a positive self-image, to develop a sense of some control over his/her environment, and to recognize the consequences of his/her decisions.

Summary

Results of this study suggested that from 2% to 9% of a normal population of children suffer from depressive syndromes, probably more females than males are affected, and some, but not all, of the symptoms may dissipate with time.

Future research is needed to further validate the depression scales and to establish reasonable cut-off scores for a diagnosis of depression. In addition, it is necessary to study the development of affect in both well-adjusted and disturbed children in order to understand the relevance of depressive symptoms to normal development.

Consistent with past research, results indicated that depression in children is related to negative self-esteem and external locus of control. There were some indications that academic achievement may be influenced by depression but results were not clear. More intensive research is required to fully understand the relationship of depression to achievement. Results suggested that depressed children experienced more change situations and had more behavior problems than nondepressed children; however, it was felt that a better understanding of the family dynamics was needed in order to understand this relationship.

It was suggested that future research was needed to determine whether depression in childhood was related to socioeconomic status; to determine if differences existed for depression in children at other stages of development; and to establish a classification for subtypes of depression in children.

The present writer suggested that there was a need for educators to recognize depression in children rather than assuming academic or behavioral problems. The need for preventative programs in education to assist the children in developing positive self-esteem and a sense of some control over their environment was discussed.

The clinician was directed to become familiar with the DSM-III multiaxial system of diagnosis for identification and diagnosis of depression in children. Although recognizing the possibility that chemical intervention may be necessary in the treatment of childhood depression, it was suggested that at least part of the treatment focus on working with the home and the school in assisting the child to develop a positive self-image, to develop a sense of some control over his/her environment, and to recognize the consequences of his/her decisions.

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APPENDIX A

LETTER TO PARENTS AND
PARENT QUESTIONNAIRE

Room 1-135 Education North
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FACULTY OF EDUCATION CLINICAL SERVICES

John G. Paterson
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D. Donald Sawatzky	Henry L. Janzen	Grace Malicky	Helen G. Ilott

April 21, 1983

Dear Parent or Guardian;

We would probably all agree that as adults we feel the pressures and stresses of our day. These stresses are passed on to our children and affect their feelings of hope for the future, their attitudes towards themselves, their school, the subjects they are studying.

With the approval of the Edmonton Public School District, we are attempting a research study to find out just how children feel about the stresses of everyday life and what effect this will have on their school work.

To complete this study we need your assistance and cooperation. Children in grades 4, 5 and 6 have been chosen for study. Your child's school has also been selected to participate. As parents, we wish your input as well and to do this you will be asked to complete a questionnaire that will help us understand how life's stresses affect your child's behaviors at home. Children will also be asked to fill out a questionnaire as to their feelings about themselves, their sense of hope for the future. Time taken for this should amount to no more than 1½ to 2 hours. The questionnaires will be administered either by a teacher or qualified professional. Of course, your responses and your child's will be held in strictest confidence! Only the researcher will have access to names.

We hope that you and your child would agree to help us. The information should be helpful in the future in providing assistance to parents and children, especially at school learning. If you agree, please complete the attached questionnaire and return it with your child to school at your earliest convenience. If you wish more information please call the Research Co-ordinator, Noreen Paananen at 433-8173 (evenings and weekends). Thank you so much for your assistance.

Sincerely,

Henry L. Janzen, Ph.D.
and
Noreen Paananen, M.Ed.

/rm

Celebrating our 75th Anniversary

PARENT QUESTIONNAIRE

Child's Name ______________________ # ______________

Birthdate ______________________ Age ______________

School ______________________ Grade ______________

MALE _____ FEMALE _____

Checklist of Concerns

Please read each statement carefully. If the statement involves an issue that has been a concern with your child for a period of at least 2 weeks, check yes. If not a concern, check no.

	Yes	No
Child is doing poorly in school	___	___
Child is afraid of school and/or refuses to attend	___	___
Child has physical complaints with no medical cause		
headaches	___	___
stomach aches	___	___
sleep problems	___	___
nightmares (of death/loss)	___	___
Child wets the bed	___	___
Child is irritable, quarrelsome, cheeky	___	___
Child fights and/or exhibits other anti-social behavior.	___	___
Child complains of boredom or is restless	___	___
Child is sad most of the time	___	___
Child eats poorly	___	___
Child has recently lost or gained weight	___	___
Child is sleeping more or less than usual	___	___
Child does not seem to have any energy	___	___

	Yes	No
Child appears tired..................................	___	___
Child is defiant and refuses to obey	___	___
Child has temper tantrums	___	___
Child has difficulty making friends	___	___
Child is physically overactive	___	___
Child is physically underactive	___	___
Child has no interest in daily activities	___	___
Child puts himself/herself down	___	___
Child has difficulty concentrating	___	___
Child expresses a wish to be dead	___	___
Other concerns (please specify)	___	___

Change Situations	Yes	No
1. Has the family moved during the past three years?	Y___	N___

If yes, specify:
within city ________
country to city ________
city to new city ________
other ________

2. How many different schools has the child been in during the past three years? .... __________

3. How many different schools has the child been in since he/she started grade one? .... __________

	Yes	No
4. Has a "best friend" of the child moved within the past two years?	Y___	N___
5. Has this child ever repeated a grade (including kindergarten)?	Y___	N___

If so, which one? ________________

Yes No

6. Has there been a change in the marital status of the parents during the past three years?.......... Y__ N__

If so, specify: separation ________
divorce ________
death ________
other ________

7. Has there been a death within the immediate family (siblings, parents, gradparents) or of a close friend during the past three years? .... Y__ N__

If so, who? ________________

8. Is the child currently living with his/her natural mother and father? .... Y__ N__

9. Has the child been separated from his/her family during the past three years? (eg. institutional placement, foster home)? .... Y__ N__

If so, specify ________________

Other

1. Does this child suffer from any chronic illness?.. Y__ N__

If so, specify ________________

2. Is this child on medication? .... Y__ N__

If so, specify ________________

3. Does any other member of the immediate family suffer from any chronic illness? .... Y__ N__

If so, who? ________________

APPENDIX B

MEANS AND STANDARD DEVIATIONS OF ALL VARIABLES

TABLE A

MEANS AND STANDARD DEVIATIONS OF ALL VARIABLES

FOR MALES, FEMALES, AND TOTAL SAMPLE

		MALES (N=297)	FEMALES (N=313)	TOTAL (N=610)
Age	x	131.51	130.67	131.08
	sd	11.39	10.88	11.13
Verbal IQ	x	112.06	113.27	112.68
	sd	13.88	13.62	13.75
Quantitative IQ	x	105.99	107.31	106.66
	sd	14.30	13.92	14.11
Nonverbal IQ	x	107.08	109.30	108.21
	sd	14.58	14.66	14.65
Decoding	x	56.65	59.80	58.28
	sd	26.98	27.67	27.36
Comprehension	x	56.60	61.66	59.21
	sd	27.66	27.21	27.52
Math	x	60.38	58.50	59.41
	sd	28.10	26.50	27.28
Total Self-Esteem	x	39.38	39.03	39.20
	sd	7.58	8.61	8.12
General Self-Esteem	x	15.90	15.74	15.82
	sd	3.35	3.83	3.60
Social Self-Esteem	x	7.04	6.68	6.86
	sd	2.16	2.34	2.26
Academic Self-Esteem	x	7.99	8.16	8.08
	sd	2.04	2.08	2.06
Parental Self-Esteem	x	8.44	8.45	8.44
	sd	1.96	1.94	1.95
Lie Scale	x	7.19	7.35	7.27
	sd	1.99	1.93	1.96

Table A Continued

		MALES (N=297)	FEMALES (N=313)	TOTAL (N=610)
Locus of Control	x	14.83	14.79	14.81
	sd	4.96	5.24	5.10
Childrens Depression Inventory	x	6.68	7.75	7.23
	sd	6.29	7.41	6.90
Affective Response	x	18.48	18.96	18.73
	sd	6.36	6.68	6.53
Social Problems	x	19.99	20.13	20.07
	sd	6.68	7.25	6.97
Self-Esteem	x	19.47	19.71	19.59
	sd	6.74	6.86	6.80
Sickness & Death	x	18.59	17.71	18.13
	sd	5.75	5.94	5.86
Guilt	x	19.92	19.48	19.69
	sd	6.18	6.33	6.26
Miscellaneous Depression	x	25.07	25.27	23.17
	sd	6.69	6.79	6.74
Total Depression	x	121.51	121.25	121.38
	sd	32.26	34.90	34.08
Pleasure & Enjoyment	x	16.84	17.36	17.11
	sd	4.89	5.13	5.02
Miscellaneous Positive	x	21.63	21.96	21.80
	sd	5.39	5.34	5.36
Total Positive	x	38.48	39.32	38.91
	sd	9.11	9.49	9.31
DSM-III--A	x	.054	.029	.041
	sd	.226	.167	.198
DSM-III--B	x	.963	.754	.856
	sd	1.295	1.222	1.262

Table A continued

		MALES (N=297)	FEMALES (N=313)	TOTAL (N=610)
Behavior Problems	x	1.333	.955	1.139
	sd	1.640	1.436	1.549
School Problems	x	.263	.115	.187
	sd	.574	.375	.487
# Moves	x	.700	.658	.679
	sd	.754	.713	.733
# Schools	x	2.276	2.176	2.225
	sd	1.394	1.400	1.397
# Marital Changes	x	.165	.150	.157
	sd	.407	.384	.395
# Deaths	x	.276	.319	.298
	sd	.531	.655	.598
# Without Both Parents	x	.266	.204	.234
	sd	.443	.404	.424
Chronic Illness Child	x	.077	.077	.077
	sd	.268	.267	.267
Chronic Illness Other	x	.114	.102	.108
	sd	.359	.395	.378

TABLE B

MEANS AND STANDARD DEVIATIONS OF ALL VARIABLES FOR GRADES 4, 5, 6; INSTITUTIONAL; AND TOTAL SAMPLES

		Gr. 4 N=192	Gr. 5 N=219	Gr. 6 n=195	Inst. N=4	Total N=610
Age	x	118.74	130.91	143.27	138.50	131.08
	sd	5.39	5.08	5.30	11.00	11.13
Verbal IQ	x	115.64	112.54	110.87	a	112.68
	sd	13.33	13.00	13.83	a	13.75
Quantitative IQ	x	109.47	106.08	105.13	a	106.66
	sd	14.27	14.57	13.13	a	14.11
Nonverbal IQ	x	110.38	105.48	109.38	a	108.21
	sd	16.05	14.76	12.42	a	14.65
Decoding	x	57.90	57.32	59.73		58.28
	sd	28.25	27.31	26.61		27.36
Comprehension	x	58.76	58.10	60.90		59.21
	sd	27.65	28.14	26.75		27.52
Math	x	59.35	57.77	61.32		59.41
	sd	27.27	27.67	26.86		27.28
Total Self-Esteem	x	39.26	39.06	39.38	35.00	39.20
	sd	8.24	8.16	8.04	3.74	8.12
General Self-Esteem	x	15.75	15.83	15.93	14.00	15.82
	sd	3.61	3.67	3.55	1.41	3.60
Social Self-Esteem	x	6.80	6.72	7.09	6.00	6.86
	sd	2.32	2.18	2.28	2.94	2.26
Academic Self-Esteem	x	8.25	7.98	8.02	8.00	8.08
	sd	1.91	2.15	2.12	.82	2.06
Parental Self-Esteem	x	8.46	8.54	8.35	7.00	8.44
	sd	1.96	1.90	2.00	1.16	1.95
Lie Scale	x	7.02	7.12	7.73	5.25	7.27
	sd	2.11	1.80	1.89	2.63	1.96

Table B Continued

		Gr. 4 N=192	Gr. 5 N=219	Gr. 6 N=195	Inst. N=4	Total N=610
Locus of Control	x	15.60	15.16	13.51	20.25	14.81
	sd	4.72	5.07	5.26	3.59	5.10
CDI	x	7.28	7.22	7.04	15.00	7.23
	sd	7.34	6.78	6.55	6.63	6.90
Affective Response	x	19.10	18.74	18.28	21.25	18.73
	sd	6.61	6.74	6.21	6.24	6.53
Social Problems	x	20.37	20.21	19.55	22.50	20.07
	sd	6.97	6.83	7.15	7.05	6.97
Self-Esteem	x	19.96	19.55	19.23	22.00	19.59
	sd	6.95	6.91	6.55	5.72	6.80
Sickness & Death	x	18.33	17.90	18.12	22.75	18.13
	sd	5.73	5.91	5.91	6.95	5.86
Guilt	x	19.90	19.72	19.39	23.00	19.69
	sd	6.21	6.33	6.16	10.39	6.26
Miscellaneous Depression	x	25.05	25.38	24.95	30.25	23.17
	sd	7.03	6.75	6.43	6.13	6.74
Total Depression	x	122.71	121.49	119.52	141.75	121.38
	sd	34.29	34.40	33.64	31.12	34.08
Pleasure & Enjoyment	x	17.01	17.28	17.03	16.50	17.11
	sd	5.12	5.40	4.52	2.65	5.02
Miscellaneous Positive	x	21.91	21.95	21.52	22.00	21.80
	sd	5.94	4.99	5.17	5.72	5.36
Total Positive	x	38.92	39.23	38.55	38.50	38.91
	sd	9.93	9.33	8.73	7.85	9.31
DSM-III--A	x	.047	.046	.026	.250	.041
	sd	.212	.209	.158	.500	.198
DSM-III--B	x	1.010	.886	.631	2.700	.856
	sd	1.358	1.204	1.147	2.363	1.262

Table B Continued

		Gr. 4 N=192	Gr. 5 N=219	Gr. 6 N=195	Inst. N=4	Total N=610
Behavior Prob.	x	1.281	1.205	.841	5.250	1.139
	sd	1.667	1.585	1.223	.957	1.549
School Prob.	x	.198	.192	.169	.250	.187
	sd	.524	.524	.402	.500	.487
# Moves	x	.714	.662	.656	1.000	.679
	sd	.742	.751	.703	.816	.733
# Schools	x	2.062	2.306	2.251	4.250	2.225
	sd	1.268	1.349	1.511	2.500	1.397
# Marital Changes	x	.156	.169	.138	.500	.157
	sd	.392	.422	.361	.577	.395
# Deaths	x	.339	.292	.272	0.000	.298
	sd	.720	.539	.530	0.000	.598
# Without Both Parents	x	.219	.215	.256	1.000	.234
	sd	.414	.411	.438	0.000	.424
Chronic Illness Child	x	.078	.068	.087	0.000	.077
	sd	.269	.253	.283	0.000	.267
Chronic Illness Other	x	.130	.064	.133	.250	.108
	sd	.433	.280	.410	.500	.378

[a] WISC-R scores available for institutional sample
Verbal IQ x= 82.50; sd=9.88
Performance IQ x= 89.00; sd=6.16
Full Scale IQ x= 84.25; sd=7.41